Study Unit

The Principles of Color

Preview

This study unit introduces you to the use of color in interior decorating. Color, probably more than any other decorating element, is the key to a professional decorating job. Knowing how to distribute color in a room is just as important as knowing how to select color for the best decorative effect. To become a successful interior decorator, you must learn to master the use of color.

In this study unit, you'll learn many different principles to help you control the use of color in your work. The principles you'll acquire and the activities you'll perform will help you learn to make professional use of color—the most powerful and exciting decorating tool you have.

When you complete this study unit, you'll be able to

- Explain the importance of color in decorating and how color affects people
- Discuss specific properties of color and explain how color balance is created within a room
- Identify primary, secondary, and intermediate colors and show their placement on the color circle
- Recognize various types of color schemes based on the color circle
- Demonstrate how to lessen the intensity of a color
- Explain how colors affect each other and how the amount of light and various surfaces can affect color
- Use a variety of sources as inspiration for color schemes
- Experiment with watercolors to become more familiar with colors and how to use them in decorating

Remember to regularly check "My Courses" on your student homepage. Your instructor may post additional resources that you can access to enhance your learning experience.

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The Principles of Color

COLOR: MORE THAN A RAINBOW

As an interior decorator, you have a treasure chest full of colors at your disposal—even more colors than you see in a rainbow! You may wonder how that's possible. Isn't it true that a rainbow represents all of the colors in the world?

Rainbow colors do represent the three primary colors—red, yellow, and blue—and the colors between them that result when the primary colors are mixed. For example, mixing red and yellow produces orange, mixing yellow and blue produces green, and mixing blue and red produces violet. These six colors—red, yellow, blue, orange, green, and violet—are the basic colors that everyone—even small children—is familiar with. But many other wonderful colors result from mixing these six colors and then from lightening and darkening each one. These subtle color changes create miracles of difference in decorating results.

When you begin to decorate your first room and ultimately when you begin your career as an interior decorator, you can make or break a room by properly or improperly using colors together. Combining colors to create a pleasant atmosphere with the proper mood requires knowledge of colors and a willingness to experiment. Study the decor in Figure 1 to see how one decorator used color effectively.

In this study unit, you'll learn some principles of color and you'll study how to use color schemes that enhance the room you're decorating. The more you learn about color, the better you'll be able to create rooms to suite the needs and tastes of your clients.

FIGURE 1—A decorator's use of color is the mark of professionalism on a decorating job. (Reprinted with permission from Pearson Co., a division of Lane)

A Thousand and Some Colors

If you go to any paint store and examine its extensive collection of colors, you'll begin to understand the marvelous range of colors available to you as a decorator (Figure 2). Some manufacturers provide over 1,500 colors of paint. Becoming a decorator means opening your eyes to this whole world of color variety.

In your study of interior decorating, you'll find that color is extremely important in room decor. In fact, color is usually the single most important factor in creating the mood of a room. Consider just a few things that color can do for a room:

FIGURE 2—Look at the vast selection of colors on the wall behind this couple. And these colors represent just one paint company. Other companies offer just as many color options.

- It can unite furnishings that may otherwise seem unrelated.
- It can minimize architectural faults, such as a too-low ceiling or a poorly placed door.
- It can make a small room look larger or a large room look smaller.

Color is one of the most exciting and versatile tools a decorator possesses. It's the knowledgeable use of color that can make a room come alive. Even with the simplest, most inexpensive furnishings in the plainest room, the proper use of color can transform the room into a gem. It's no wonder, then, that some interior decorators rapidly build their reputations on the basis of their imaginative use of color.

Paint on the Internet

Paint companies often have interesting Web sites where you can experiment with their selection of paint colors. For some examples, you can visit

http://www.glidden.com

http://www.behr.com

You can see how colors will look together, and you can actually paint an online room to see how it looks.

Experiencing Color

Wherever we look, we see color. Our eyes constantly react to color, whether or not we're aware of it. Not only our eyes, but our minds and emotions respond to different colors in different ways. Some of these responses are common—that is, they're shared by most people share. Other responses are personal responses that depend on an individual's experiences and personality. In Figures 3 and 4, the mood of each room is set by the decorator's choice of color.

FIGURE 3—Color sets the mood of a room. The gold tones of this dining room create a warm, inviting atmosphere. (Photography courtesy of Drexel Heritage Furniture)

FIGURE 4—A well-balanced blend of color and contrast gives this room its cheerful, pleasing effect.

Common Responses to Color

Colors are frequently associated with moods and emotions. Expressions such as “in the pink,” “a rosy outlook,” and “feeling blue” reflect those associations. Most persons respond to colors in the ways indicated by such phrases. Colors such as yellow, orange, and red are considered as warm, stimulating colors. Those colors are associated with fire and the sun. Blues and greens are usually considered as cool and serene because of their association with cool forests, the sky, and water. Therefore, most people feel that a red room is warmer than a blue room, even though the temperature is the same in both rooms.

The colors below are listed in the order of their popularity with most people, along with the impressions and moods they generally give:

1. Red—strong, stimulating
2. Blue—serene, cool, remote
3. Violet—impressive, stately
4. Green—restful, calm
5. Orange—cheerful, warm
6. Yellow—sunny, bright

This list consists of just *pure colors*—the bright colors you see in children's paint jars. But any of these pure colors can be modified to make them more attractive to people. Colors can be made lighter, darker, or duller to change their impact on people. A person who can't stand a strong, dark royal blue might love a delicate, light sky blue. Someone who detests bright red might like a rich wine (dark red) color. These variations from pure colors give interior decorators an almost endless range of color tools to use in creating interiors.

Individual Responses to Color

As a decorator, you must never lose sight of the fact that you're dealing with individual clients. Although most people respond to colors in the same way, an individual's specific likes and dislikes may be conditioned by what he or she has experienced in life and by his or her own disposition.

For example, red is a very popular color with many individuals. However, you should never assume red is right for everyone. Perhaps one of your clients disliked a teacher who always wore a red sweater. Now this client can't stand anything in that color. Or maybe another client's personality is such that she finds red jarring to her sense of tranquility. Therefore, before you begin any decorating job, you should always determine your client's color likes and dislikes.

Unify a Room with Color

Whenever you're ordering wallpaper or material for curtains or bedspreads, be sure to buy a little extra wallpaper or fabric. You can use it elsewhere in the room to tie the colors together. The extra fabric can be made into throw pillows, and the extra wallpaper can be applied to the side of an armoire or to the cover of a photo album.

The Properties of Color

Color has different properties, or qualities, that produce certain effects on the people who see them. The three common properties are *hue, value,* and *intensity*. Successful decorators should know the different properties of color and how they can use these properties to enhance their work. This section of your study unit explains how these properties work to solve decorating problems and create exciting new color schemes.

Hue

What's the first thought you have when someone asks you the color of your new car or chair or coat? You think of the name of the color—the car is red or the chair is blue or the coat is green. The name of a color (red, blue, green, and so on) is its hue. Hue is just one of three dimensions of any color.

Value

Value is the amount of lightness or darkness in a color. "My car is light blue." "My coat is very dark green." Values progress from white (the lightest value) to black (the darkest value), with graded values of gray between white and black. Light values, obtained by adding white to a color, are called *tints.* Dark values, obtained by adding black to a color, are called *shades*. Figure 5 illustrates the gray value scale, from pure white at the left to pure black at the right. Figure 6 shows a value scale for green. In the center of the scale is the pure color. The colors to the left of the pure color are tints—that is, white has been added to the pure color in increasing

amounts to create lighter and lighter tints. The colors to the right of the pure color are shades—that is, black has been added to the pure color in increasing amounts to create darker and darker shades. No matter what color is used, value changes are made in terms of lightness and darkness only.

FIGURE 5—Gray Value Scale

FIGURE 6—This figure represents a color value scale for green. The pure color is in the very center. The colors to the left of the pure color are tints of the pure color—that is, white has been added to the pure color in increasing amounts. The colors to the right are shades of the pure color—that is, black has been added to the pure color in increasing amounts.

Using the Vocabulary of Color

The word *shade* in regard to color is frequently misused. People mistakenly ask "What shade of blue is your new car?" They really want to know the value of the color. Or you may have heard someone say, "It's a very light shade." There's no such thing as a light shade. A shade (like the shade of a tree) is always darker than the pure hue.

Intensity

Intensity, the third property of color, is the amount of brightness or dullness in a color. A pure red, for example, is high in intensity, whereas a dulled maroon red is low in intensity. (Later in this study unit, you'll learn how you can dull intense colors.) When the intensity of a color is lowered, we say that it's being *grayed,* or *toned down.*

The lower the intensity, the more grayed a color becomes. Some colors, such as blue and red, are pleasant to many people when seen at their full intensity. These colors are

described as strong, rich, forceful, and vivid. Other colors at full intensity, such as some of the yellow-greens and red-purples, are offensive to some people and may be described as gaudy or garish. When these colors are toned down—that is, when their intensities are lowered—they become acceptable colors. Some colors whose intensities have been reduced (such as muted blues and rusts) are described as subdued, or softened, colors. Others, such as an extremely subdued olive color, may be described as drab. The character of a color changes as it becomes more toned down. But this toning down gives the decorator a wider variety of mood colors from which to choose.

Using Color Value: Contrasts

Proper use of color value is very important to you as an interior decorator. You can use similar or contrasting values to help you solve decorating problems. For example, suppose you wish to minimize (play down) a pair of windows that are too far apart or too small, as shown in view A of Figure 7. You can't cover the windows completely because the light from them is needed in the daytime. The wall is painted a very light value of blue. What's the solution?

You can find a pair of blue draperies so that the window covering will be the same color as the walls, thus minimizing the windows. Sounds great! But when you hang the draperies, you find the windows still stand out, as shown in view B. What happened? Both the wall and the draperies are blue, but the value of the draperies is darker than that of the wall, so the windows are still obvious. There's too much contrast of values. The draperies and wall must be the same value as well as the same hue in order to blend smoothly. You find draperies in the same (or a close) value and color as the wall. Now the draperies merge with the wall, minimizing the windows, as shown in view C. Success!

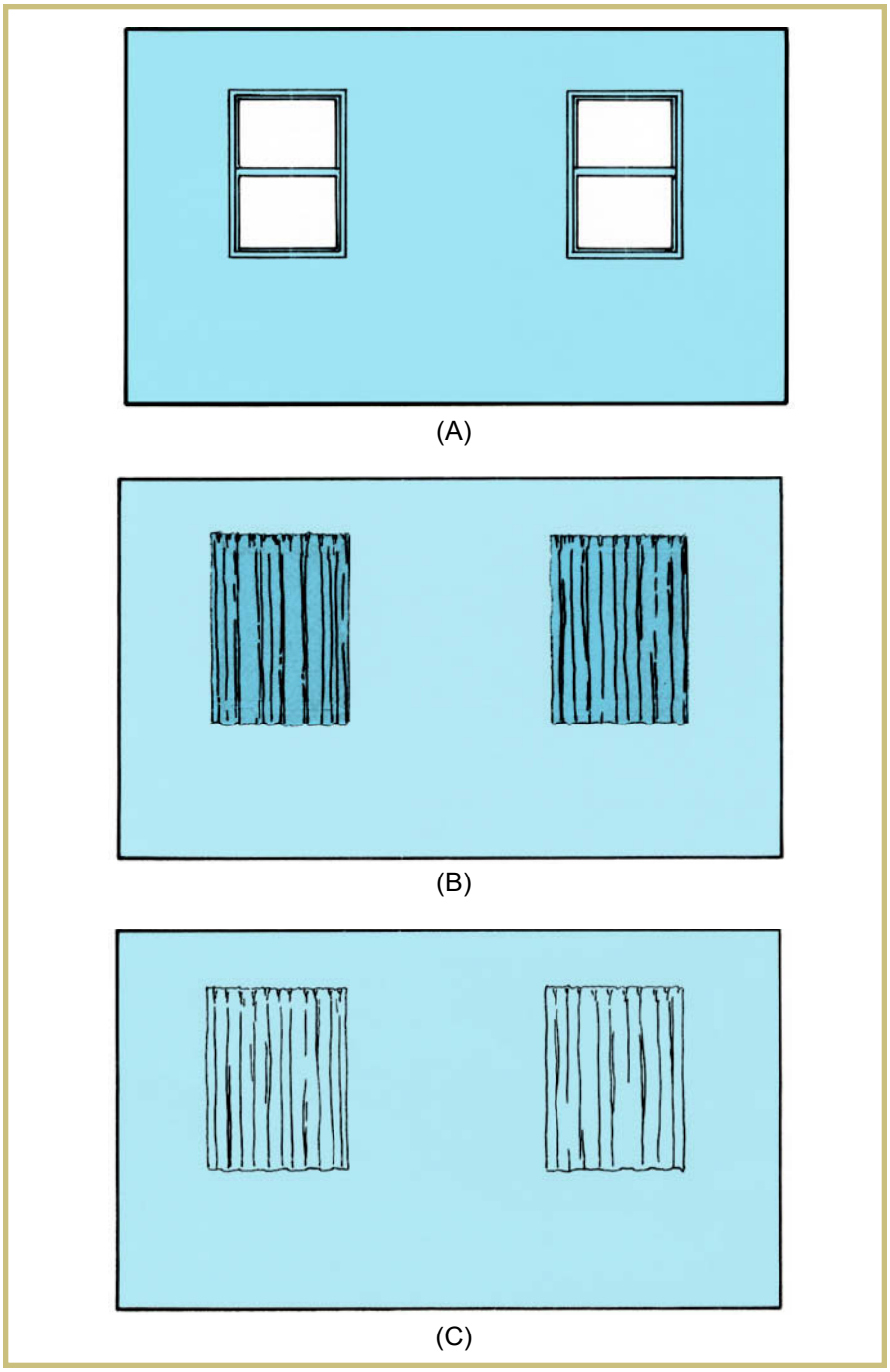
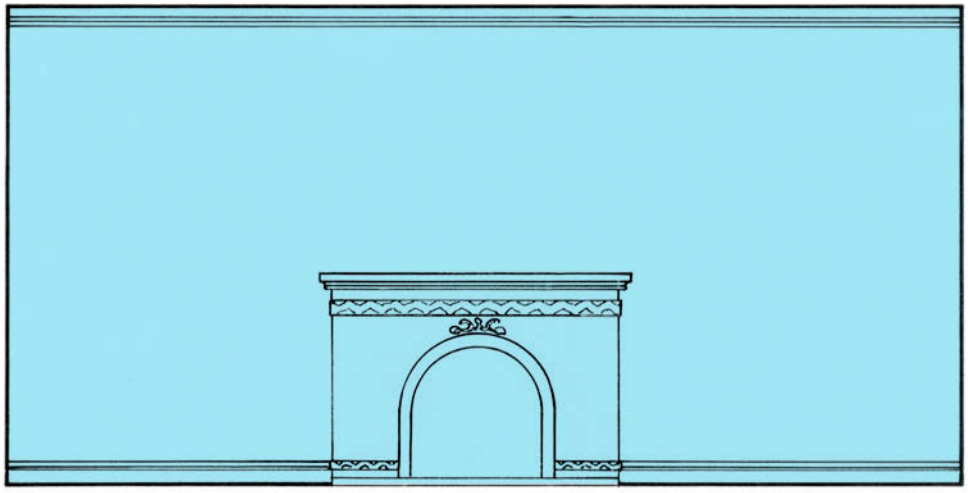


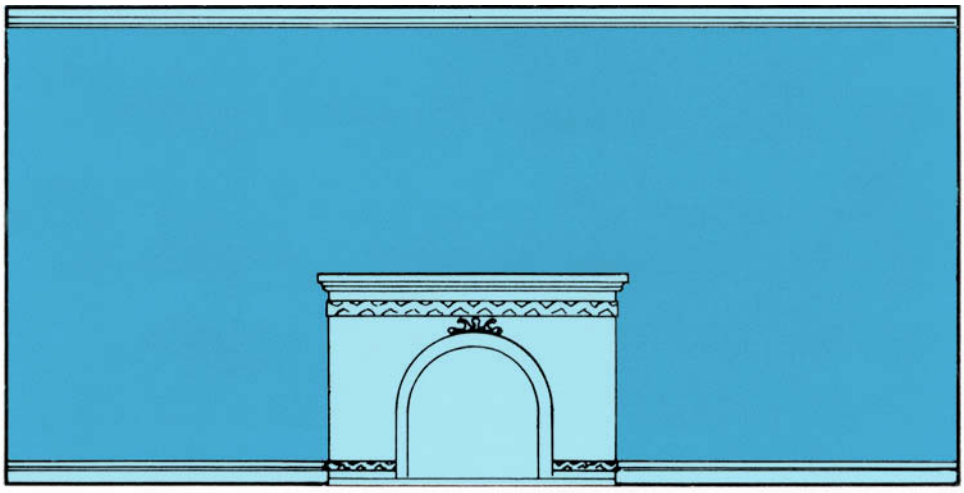
FIGURE 7—Small windows, such as those in view A, are a common decorating problem. The remedy can be to find draperies or curtains to match the hue of the walls. In view B, the draperies are the same hue, but too dark of a value. In view C, the draperies and wall merge because they have almost the same value, or degree of lightness. In other words, there's very little contrast in the values.

In some situations, however, a contrast of values is exactly what will help most. For example, suppose a living room has a charming fireplace with a marble mantel. The walls of the room are painted the same color as the mantle. Therefore, there's little or no contrast of values between the fireplace and the wall, as shown in view A of Figure 8. The fireplace fades into the wall. Your client loves the fireplace and wants it to be the center of interest in the room. What do you do?

One way in which you can make the mantel more obvious is to paint the wall surrounding it a somewhat darker value. By doing this, you achieve a contrast between the light fireplace and the darker wall. The fireplace is now established as the center of interest, as shown in view B. You can then add accessories to the mantel and over the mantel to increase its importance as the focal point in the room. (The color of the wall should, of course, harmonize with the rest of the color scheme in the room, but the value should be darker than that of the fireplace.)



(A)



(B)

FIGURE 8—In view A, the fireplace and mantel fade into the wall. In view B, the contrast between the fireplace and the wall helps to highlight the fireplace, making it the focal point in the room.

Color in Different Textures

Your color theme need not be limited to one particular texture in the room, such as the fabrics or rugs. For instance, you can easily follow a theme with a rattan floor, an antique end table, a chenille throw pillow, and the background of a painting. Find surprising ways to unite a room with color. A theme with texture is more pleasing to the eye than a more predictable trend.

Every room needs some value contrast to make it interesting. But avoid extremely sharp contrasts (very light against very dark), unless you desire to create a dramatic effect. The balance of values in Figure 9 creates a strong, dramatic effect. The addition of the plaid chair and two sofa pillows helps create contrast between areas of very dark and very light values. Some clients prefer this dramatic effect. Think of the strong contrast in a marble floor of alternating black-and-white squares. A very dramatic effect results. On the whole, however, interior decorators use sharp contrast moderately to avoid gaudiness.

FIGURE 9—Dark and light values create contrast. (Reprinted with permission from Pearson Co., a division of Lane)

As you use colors to create contrast, remember that dark values appear heavier in weight than light values. To achieve visual balance, use dark values in smaller areas, such as pillows and other accessories. Use lighter values in larger areas, such as walls and floors. The room in Figure 10 uses light values in the larger areas of the walls and sofa and dark values in the smaller areas of the throw pillow, the swan, and the picture over the fireplace.

FIGURE 10—The larger areas in this room use light values, while dark values are reserved for smaller areas.

Keeping Balance with Colors

Bright, intense colors can be very beautiful and exciting, but they're seldom used exclusively throughout an entire room. The room would vibrate with excitement, and the eye would have no place to rest. The room wouldn't feel as if it were balanced. Balance is important in making a room livable—a room in which your clients will feel at ease.

A balanced room need not be a dull room. It should contain areas of color, excitement, and interest, but it should also include areas of rest and repose. The exciting and restful areas should balance each other.

To create balance, follow this guideline: The larger an area, the less intense its color should be; the smaller an area, the more intense its color should be. As a rule, muted colors are used in the large background areas of floors, walls, and ceilings. In the small accent areas—throw pillows, vases, paintings, and so on—the brightest colors can be used. Figure 11 illustrates a foyer that follows this rule of balance. The darkest, most intense values appear in the rug. The chair fabric, accent pillow, and flowers are the accent colors that unify the design. The striped white wallcovering serves as the neutral value.

FIGURE 11—An appealing foyer is created by a well-balanced color scheme. (Furniture by Century Furniture Industries)

Figures 12 through 16 also present examples of how intensities are varied through the use of color. Don't just look at these photos. Study them carefully and notice the use of color value and intensity.

FIGURE 12—The excellent balance of light and dark values enhances this room's sophisticated look. Greenery and the pillows add color accents. (Furniture manufactured by Hickory White Company, High Point, NC)

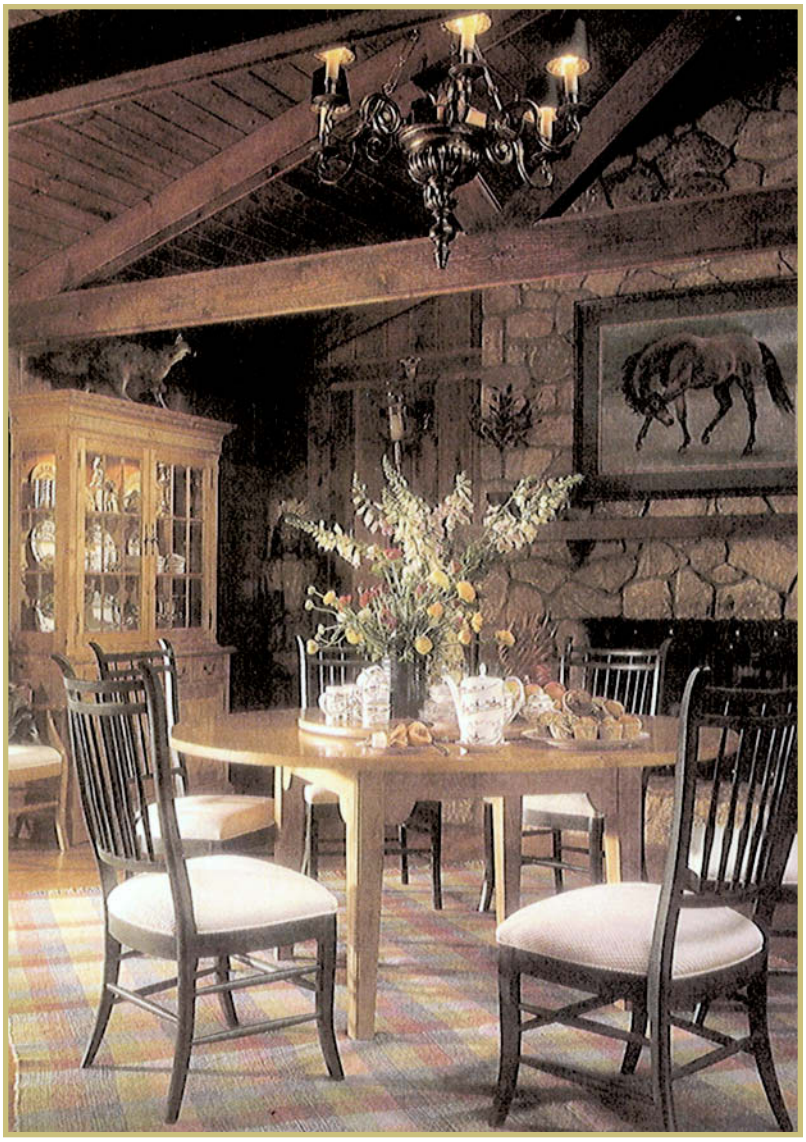


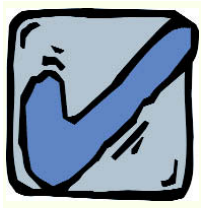
FIGURE 13—Color accessories add to this wood and stone interior, creating a more friendly room. (Photography courtesy of Drexel Heritage Furnishings)

FIGURE 14—The dynamic use of a splashy, vibrant orange and green in this floral sofa alleviates the neutral values of the room's background.

FIGURE 15—Red accents relieve the expanses of wood and add warmth to this paneled room. (Furniture by Century Furniture Industries)

FIGURE 16—The accent that brightens this mirror and console is the faux-finished ivy embellished with a red cord.
(Reprinted with permission from Lexington Furniture Industries)

In the next section, you'll continue your study of color by examining types of colors, such as primary, secondary, and intermediate colors. You'll also learn how to plan color schemes for decorating projects. Before going on to that material, please complete *Self-Check 1.*



Self-Check 1

At the end of each section of *The Principles of Color,* you'll be asked to pause and check your understanding of what you've just read by completing a "Self-Check" exercise. Answering these questions will help you review what you've studied so far. Please complete *Self-Check 1* now.

1. A balanced room should contain areas of color, excitement, and interest, but there should also be areas of _____ and _____.

2. As a rule, muted colors are generally used in the _____ of a room.

3. The basic colors of the rainbow, such as red, blue, and yellow, are referred to as _____ colors.

4. Dark values, which are obtained by adding black to a color, are also known as _____.

5. The most important factor in creating the mood of a room is _____.

Check your answers with those on page 75.

USING COLOR IN INTERIOR DECORATING

Many systems of color theory are used to develop decorating color schemes. For simplicity, we'll use a commonly recognized color system popularized by Louis Prang, an engraver and printer. The color circle you're going to study next is based on his theories.

The Color Circle

When a ray of light passes through a prism, it's broken into separate colors. The colors form a band of colors arranged in the following order: red, orange, yellow, green, blue, and violet. This band is called the *color spectrum.* Figure 17 shows how sunlight is broken into this band of colors—the color spectrum.

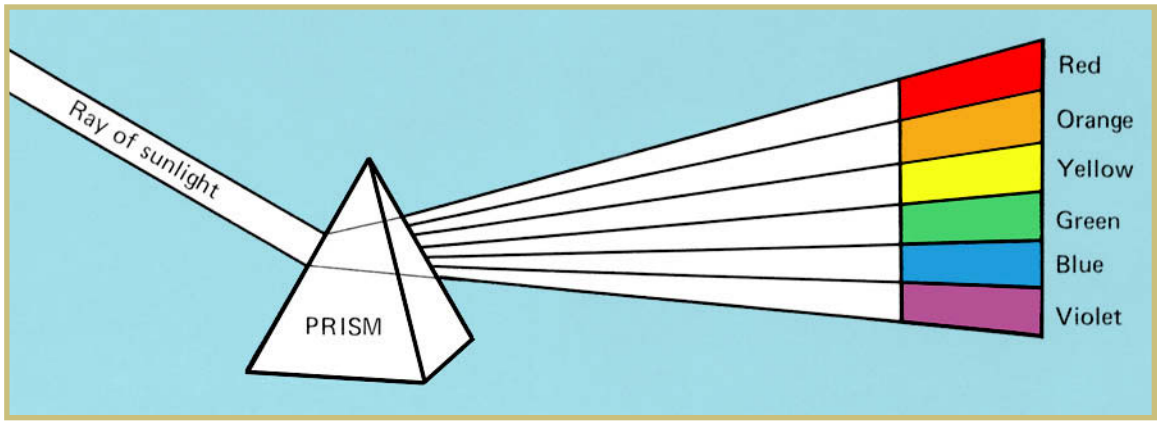


FIGURE 17—Color Spectrum

When the color spectrum is formed into a circle (Figure 18), with its red and violet ends meeting, it becomes a *color circle,* or *color wheel,* which is the basis of the color theory you'll learn and apply.

Color Circle or Color Wheel?

The terms *color circle* and *color wheel* are often used interchangeably. However, *color wheel* also refers to a tool that artists and decorators use to create color schemes. In this unit, we use the term *color circle* to refer to the color system of Louis Prang, as shown in Figure 18. We use the term *color wheel* to refer to the tool.

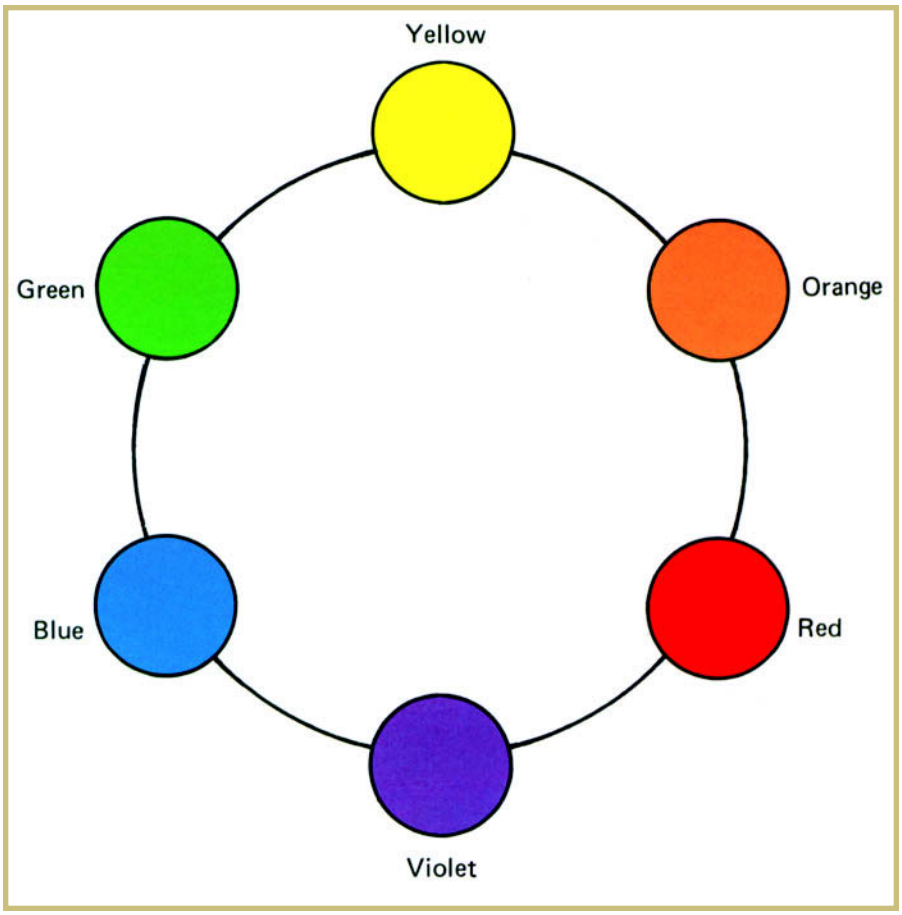


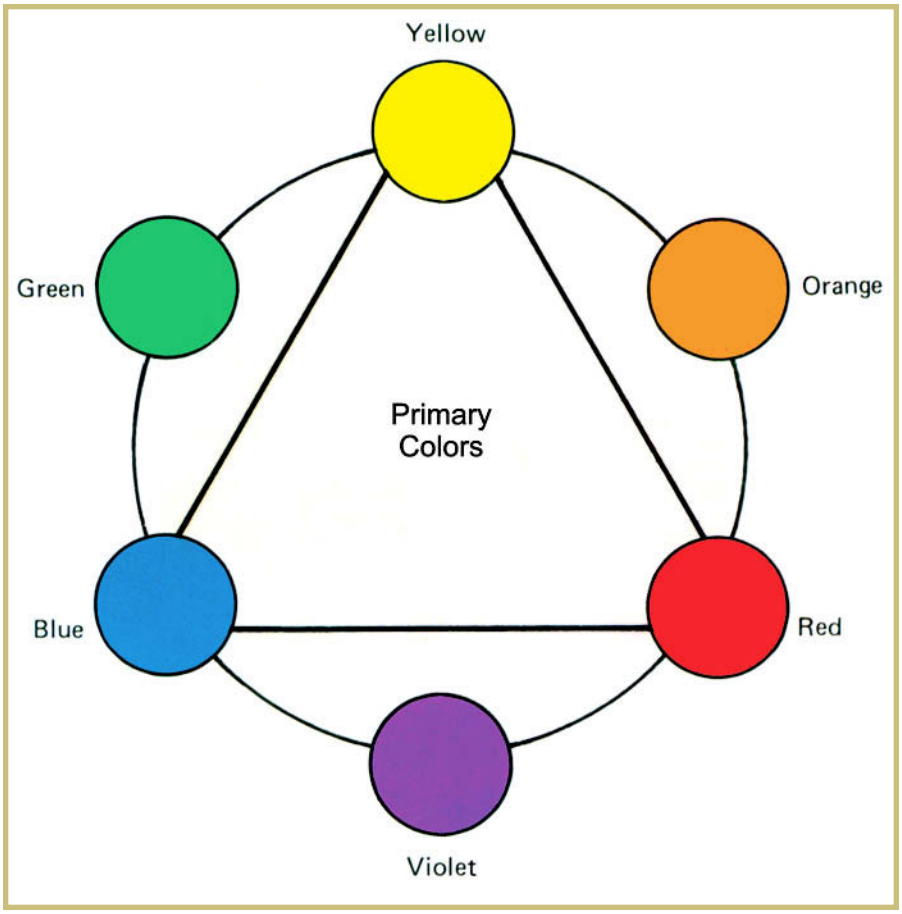
FIGURE 18—Color Circle

Primary Colors

The *primary colors* (Figure 19) are yellow, red, and blue. All of the other colors are made from combinations of those three colors.

Color schemes based on primary colors are often used in informal settings from Early American and other periods to Contemporary settings. The schemes can be quite bold and lively, or they may be more subtle if some of the colors are changed in intensity.

FIGURE 19—Primary Colors on Color Circle



Secondary Colors

A *secondary color* is formed from equal amounts of two primary colors.

When equal amounts of two primary colors are mixed, a *secondary color* is formed (Figure 20). For example, if you mix red and blue, violet (or purple) results. Mixing equal amounts of blue and yellow produces green. Finally, a mixture of yellow and red results in orange. The three colors obtained by mixing primary colors—violet, green, and orange—are the secondary colors.

A color scheme can be developed from the secondary colors—violet, green, and orange. But the secondary colors require more thoughtful and subtle treatment than do the primary colors. Some of the methods of achieving a well-coordinated and pleasing scheme involve using tints and shades and varying intensities of the secondary colors.

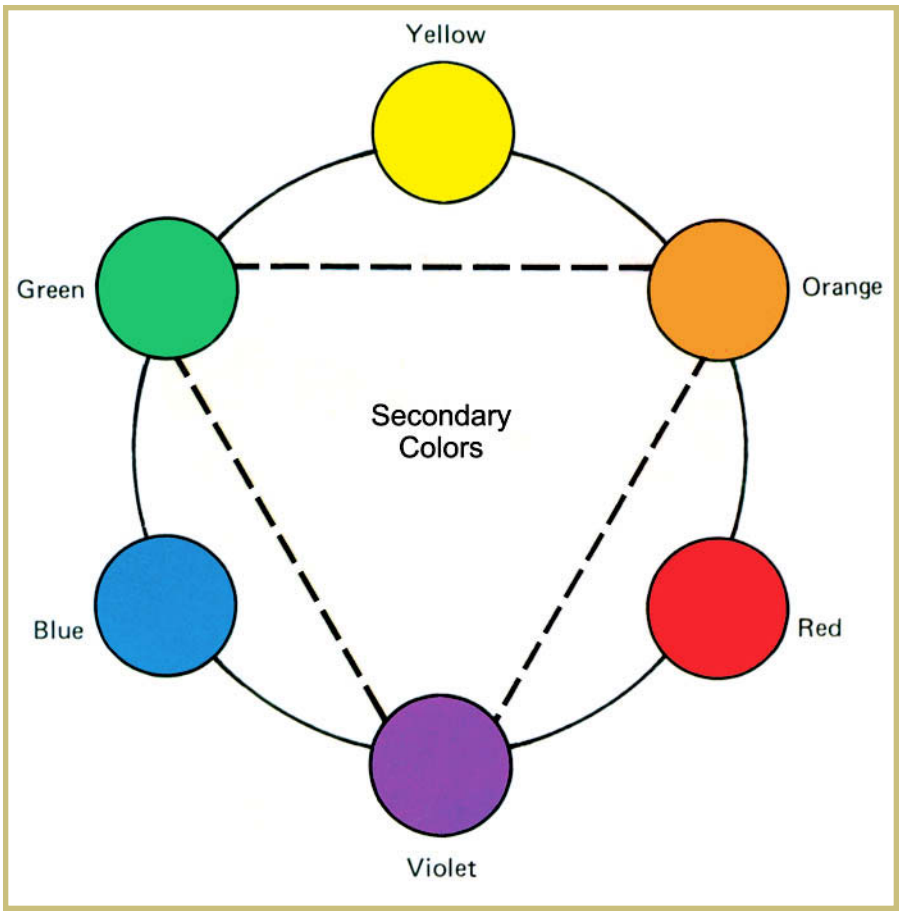


FIGURE 20—Secondary Colors on Color Circle

Intermediate Colors

In addition to primary and secondary colors, there's a third set of colors called *intermediate colors,* or *tertiary colors.* Intermediate colors are formed by mixing equal amounts of a primary color with a secondary color next to it. For example, if you mix the primary color yellow with the secondary color orange, you obtain the intermediate color yellow-orange. The other intermediate colors are red-orange, red-violet, blue-violet, blue-green, and yellow-green, as shown on the color circle in Figure 21. *Note:* In referring to intermediate colors, always put the name of the primary color first, as in yellow-green, blue-green, and red-violet.

An *intermediate color* is formed by mixing equal amounts of a primary color with a neighboring secondary color on the color circle.

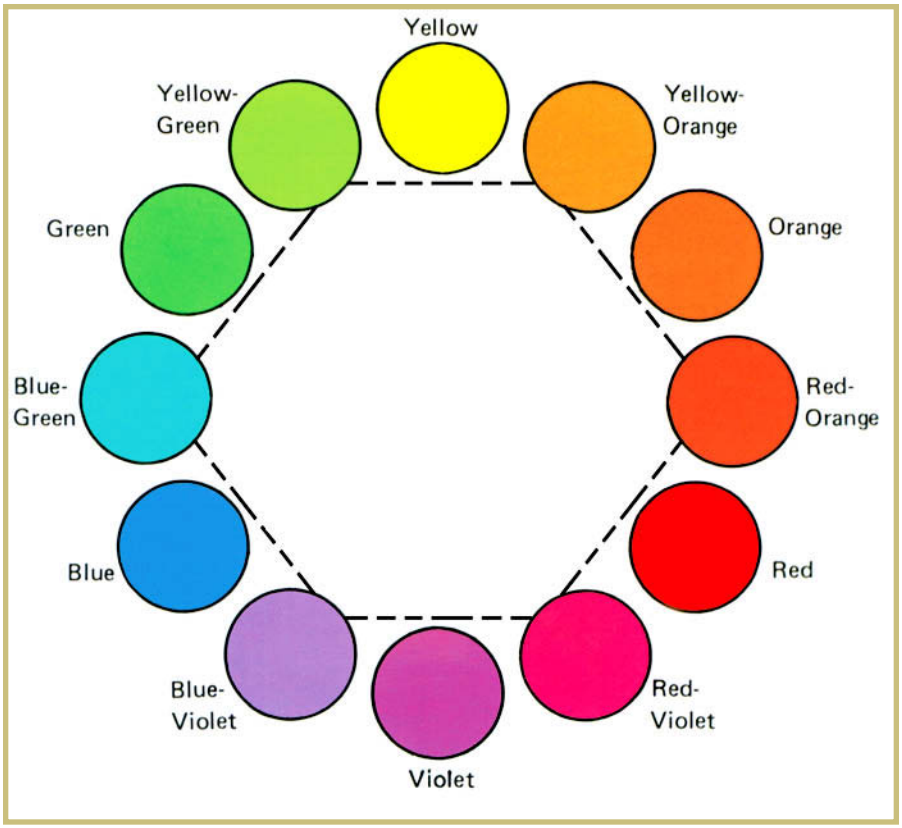


FIGURE 21—Intermediate, or Tertiary, Colors on Color Circle

Since the color spectrum is a continuous band of color, there are many colors in addition to the 12 shown in the color circle. For example, between red and red-violet is red-red-violet. However, the 12 colors shown on the color circle, with their varying tints, shades, and intensities, provide an almost unlimited range of color schemes.

Warm and Cool Colors

Some colors, such as yellow, red, and orange, are considered to give sensations of warmth. They're associated with sources of warmth such as the sun and fire. They appear to advance toward the viewer.

Other colors, such as green and blue, are considered to give a sensation of coolness. They're associated with cool waters, skies, and dense forests. The cool colors seem to recede from the viewer. The apparent advancement and recession of colors create a suggestion of depth that a decorator can use in making a room look larger or smaller than it actually is. A

small room painted in a receding color, such as light blue, looks larger than the same size room with pink walls (an advancing color).

As you look at the color circle (Figure 22), observe that you can divide it in half in terms of cool colors and warm colors. Red-violet and yellow-green are borderline colors. If they contain more of their cool color, they're considered cool; if they contain more of their warm color, they're considered warm.

Awareness of the warmth or coolness of a color is often helpful in developing a balanced color scheme. Or you may need to add a bit of warmth to a too-cool scheme or a bit of coolness to a too-warm scheme.

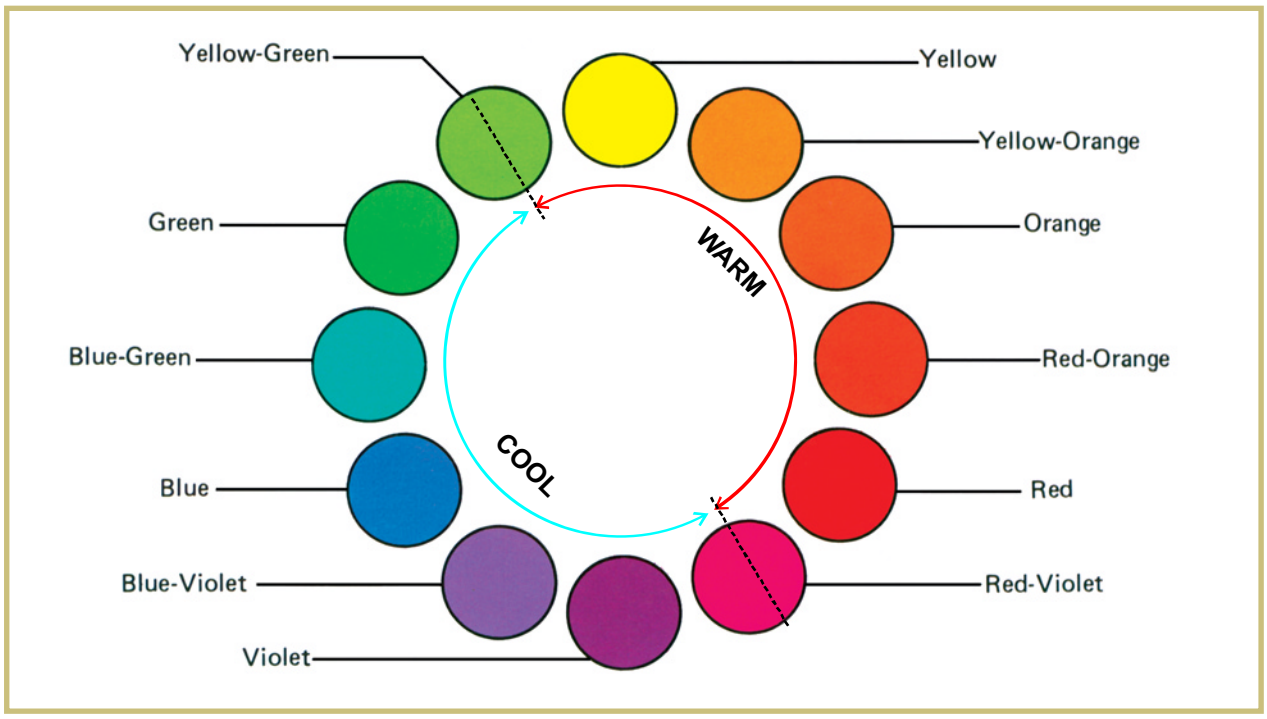


FIGURE 22—This color circle is divided into warm and cool colors. Yellow-green and red-violet can lean either to the cool side or the warm side.

Planning Color Schemes

People who haven't had training in the use of color frequently ask, "Do these two colors go with each other?" They then attempt to answer the question by examining the colors together to decide whether they like the effect. Two inexperienced people will frequently examine samples of the same

color combination and disagree as to whether the colors go well together. Then, when the color samples are turned into a room decor, each person may look at it and change his or her opinion about the combination. This method is an unprofessional approach to color. An interior decorator needs a more dependable method of planning color schemes, one with assured results. That method comes from learning how colors work together and learning to think in terms of color schemes based on the color relationships you've just seen on the color circle.

Monochromatic Schemes

A *monochromatic scheme* involves the use of only one basic color with its many values and intensities. For example, you might use the color green as the basis for your color scheme. The carpeting might be a muted medium green, the walls a very pale green, and the sofa a lighter value of green than the rug. This monochromatic scheme would produce a very pleasant and restful room. A monochromatic scheme is one of the simplest color schemes to develop. However, it's also one of the more difficult schemes to use successfully, since it can easily become dull and uninteresting.

To keep a monochromatic scheme from becoming monotonous, you must plan to add interest to the room by using a diversity of patterns, shapes, textures, and accessories. Also, neutral blacks, whites, beiges, and grays can add variety and interest. These neutral colors can be used as backgrounds, or they can be used to separate the various values and intensities in a room. For example, in the green room just described, white woodwork could be used to separate and set off the light-green walls and the medium-green carpeting. Or an area rug of beige could separate the carpeting and the sofa. To achieve unity, the white or beige would then be echoed elsewhere in the room in trim, lamps, and other accessories.

Most monochromatic rooms are pleasant, restful rooms, whether the basic color chosen is warm or cool. Even a scheme based on orange can create a calm room. Imagine peach tones (orange tints) with browns (orange shades) and neutral beiges.

A monochromatic scheme may consist of any color in the spectrum with its various values and intensities. But all variations must be derived from that one color. For example, in a scheme based on blue, you wouldn't use a tint of blue-green. It ceases to be a monochromatic scheme when a second color is introduced. The only exception to this scheme is that a neutral color, as mentioned before, may also be used in the scheme.

Paint One Wall

Most people think of painting a room. Yet one of the most dramatic ways to add a strong punch of color is by painting a single wall. It directs the focal point of the room in a quick, easy way. A dark wall can add depth and dimension to a room that's too bright and flat. Paintings tend to look better on a dark wall, so be sure to choose the wall with that in mind.

If you pick a bold, contrasting color for one wall, it makes sense to choose one of the colors from the existing patterns in the room. The upholstery on the sofa may have a background color that could be repeated in a single wall. Painting a wall a different color is a very effective accent piece to a room.

Analogous Schemes

Analogous colors, or *related colors,* are comprised of two or three colors that are next to each other on the color circle. One example of an analogous color scheme is yellow, yellow-orange, and orange (Figure 23). These three colors are considered related because all contain the same color (in this case, yellow). The first color, yellow, is a primary color. Orange (a secondary color) is comprised of yellow and red. Yellow-orange (an intermediate color) is made of a combination of yellow and orange. You can move around the color circle and find many pleasing schemes created from related, or neighboring, colors.

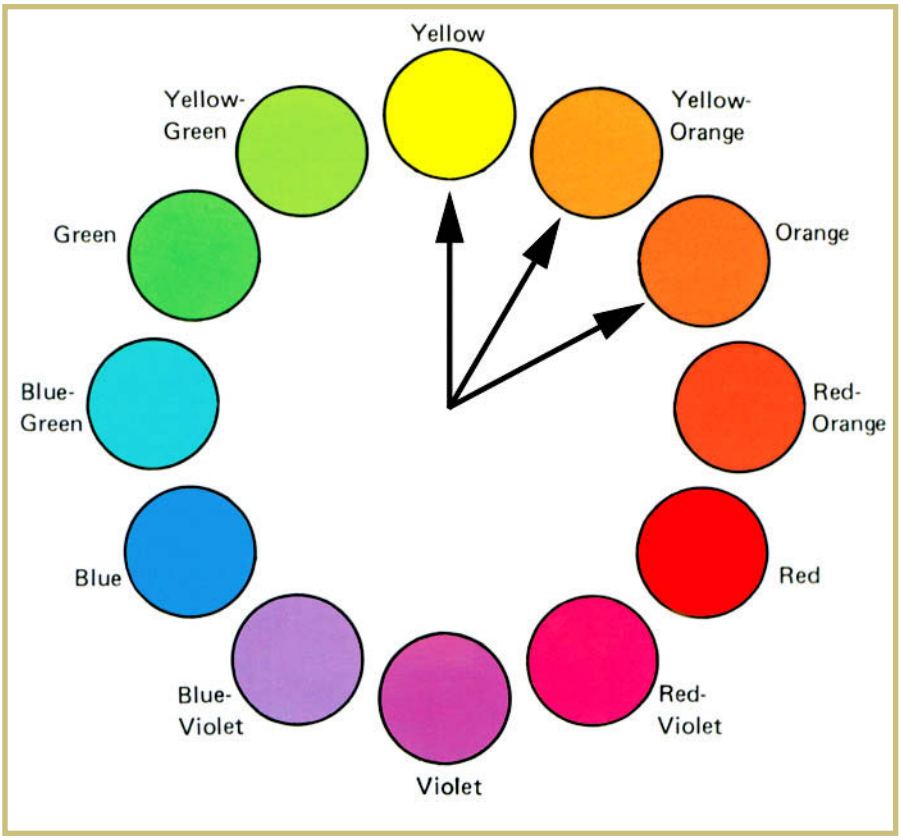


FIGURE 23—Analogous color schemes consist of two or three neighboring colors on a color circle. In this example, yellow, yellow-orange, and orange make up an analogous color scheme.

For example, let's examine the colors on the other side of yellow and develop another analogous scheme from yellow (primary), yellow-green (intermediate), and green (secondary). Still very attractive. With some of the combinations, such as red, red-violet, and violet, you may find that the values and intensities of some of the colors may have to be changed to create a harmonious scheme. For instance, a light value of a less intense red (a subdued pink) would harmonize better with violet than a strong intense red. For any one of these schemes developed from the color circle, you may need to alter the intensity and/or value of one or more of the colors for the best effect.

Interactive Color Circle

The Internet has a number of interactive color circles that you can access and use for your interior decorating work. Go to

http://www.google.com

Type "color circle" or "interactive color circle" in the search box.

Complementary Schemes

Colors directly opposite each other on the color circle are called *complementary colors.* As shown in Figure 24, violet and yellow are complementary colors. Another way to say this is that violet is the *complement* of yellow. Refer to the color circle in Figure 24 and look for other examples of complementary colors. Pick one color and then find the color directly opposite it. For example, blue-green is opposite red-orange. Therefore, blue-green and red-orange are complementary colors.

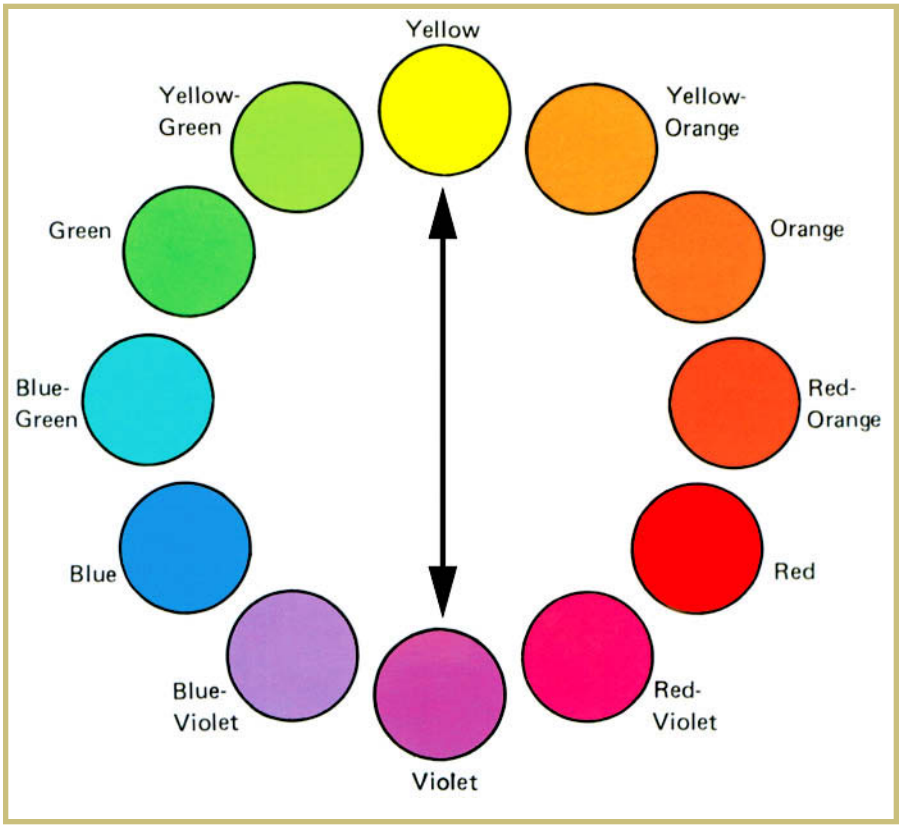


FIGURE 24—Complementary colors are opposite each other on the color circle.

When two complementary colors, such as red and green, are placed side by side, their strong contrast makes each color look more intense. The red looks redder and the green looks greener. The phenomenon of complementary colors intensifying each other enables a decorator to manipulate colors to create special effects and moods.

Decorators use complementary colors to create bright and pleasing rooms. Imagine a room based on a scheme of the complementary colors red and green. It might remind you of a field of grass scattered with red poppies.

Decorators sometimes use the term *complementary* to mean colors that are far from each other on the color circle. They may also use the term to refer to a pair of colors, one of which is warm and the other cool, such as yellow and blue.

When using complementary colors in a scheme, usually you wouldn't use both colors at full intensity. For most people, that intensity would be too vibrant and unsettling. Instead, one of the colors might be subdued in intensity (and perhaps lightened in value) for the large areas of the room. The other color might be used at full intensity for small accent colors.

Typically, large areas of neutralized, or grayed, colors are used with small areas of colors with high intensity. That procedure produces a balanced room. Distributing the accent color throughout the room provides balance, rhythm, and unity by leading the eye around the room.

Graying Colors

When complementary colors are mixed together, they gray each other. That is, they lessen each other's intensity. If a little green is added to red (the complement of green), the red becomes duller. That is, it won't be as bright as it was. As more green is added, the red becomes duller and duller until it finally becomes gray.

As a decorator, this knowledge is important to you. When you see a color that has been dulled, you should be able to recognize from what colors it was derived—that is, what was used to gray it. You'll gain this ability as you become very familiar with the complementary colors on the color circle and as you practice identifying grayed colors whenever you see them. From this knowledge, you'll be able to choose grayed colors that fit into the color schemes you develop.

Making Complex Color Schemes Work

Complex color schemes are all about layers. Here's a recommendation from HGTV designers. If the walls are purple, try a multicolored sofa throw that contains that same color purple. Your accent colors could include a complementary medium gold. You could use pillows that repeat the purple wall color or use another complementary color, such as orange. Copper and purple are also marvelous together! Consider an oxidized copper fan. For more color ideas, visit **http://www.hgtv.com.**

In the Search box, type the word **color.**

Split-Complementary Schemes

A variation of the complementary scheme is the *split-complementary scheme,* which consists of one color and the two colors on each side of its complement. For example, the complement of red-orange is blue-green. The colors on each side of blue-green are blue and green. So, an example of a split-complementary color scheme is red-orange, blue, and green (Figure 25). The colors in a split-complementary scheme don't vibrate with each other as much as they do in a complementary scheme, so the colors are much easier to control.

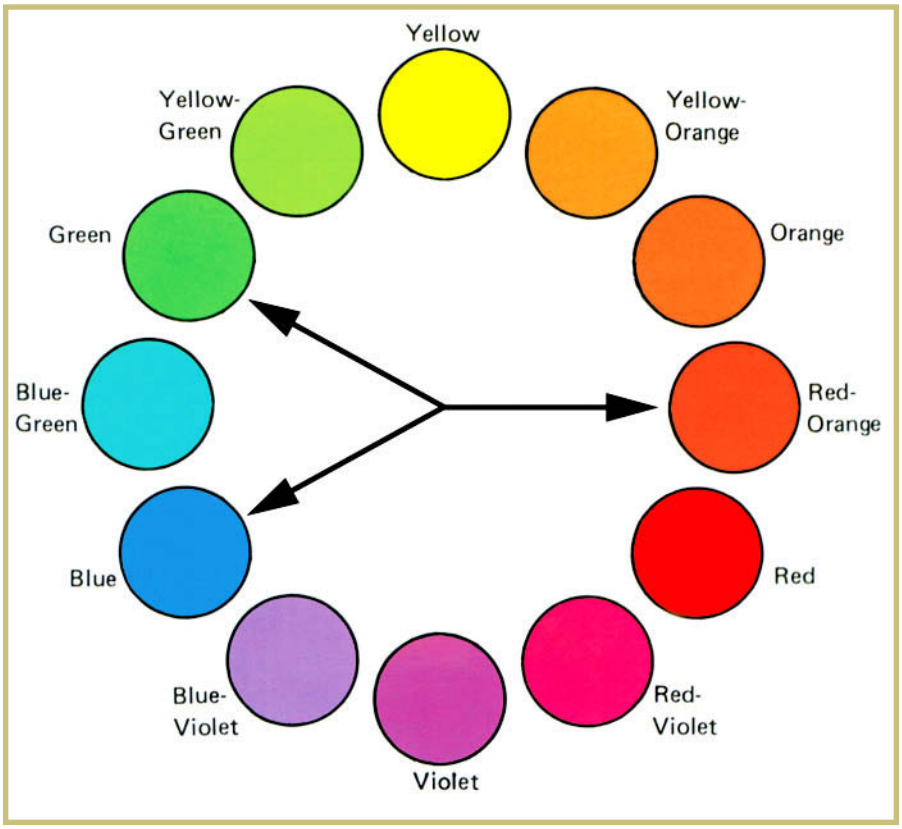


FIGURE 25—Split-complementary color schemes provide high contrast, but they don't have the intensity of a simple complementary color scheme.

Double-Complementary Schemes

Another variation of the complementary scheme is the *double-complementary scheme,* which consists of two adjacent colors on the color circle and their complements. For example, the colors orange and red-orange are two adjacent colors on the color circle. The complements of these colors are blue and blue-green. These four colors comprise a double-complementary scheme (Figure 26).

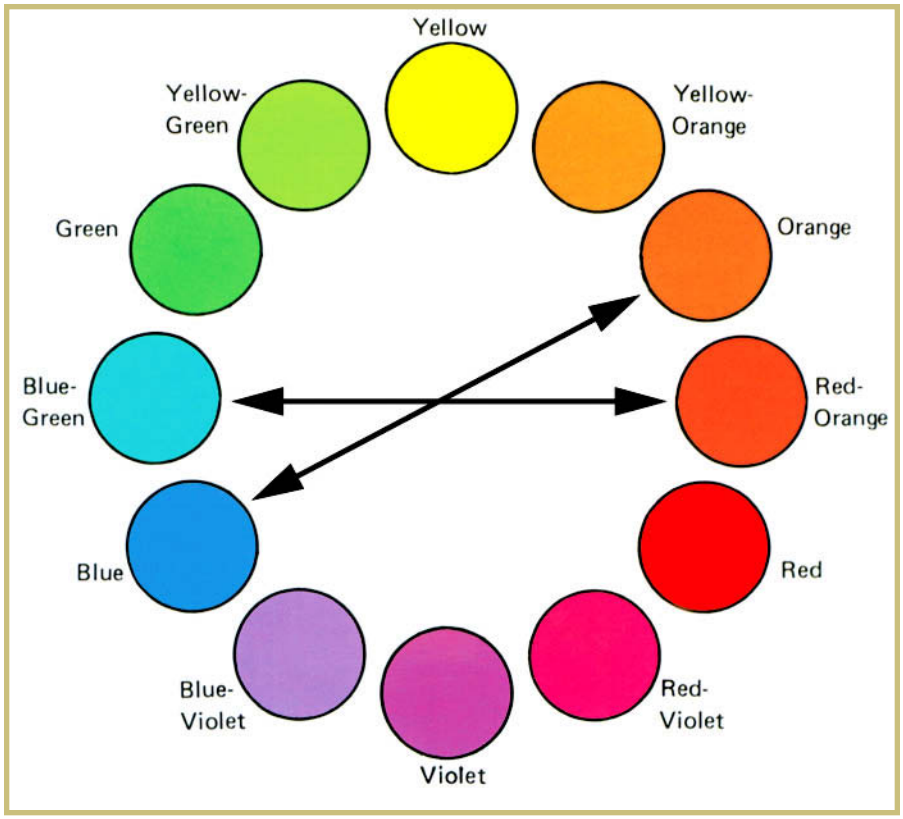


FIGURE 26—Double-complementary color schemes provide a very rich-looking effect.

Because this scheme has more colors than any other scheme you've studied so far, you must carefully control how you use these colors in a decorating plan. Possibly the best approach to working with a double-complementary color scheme is to choose one of the colors to be the dominant color and make the other three colors subdued. If all four colors are used in the same amounts, the scheme will be unbalanced. Also, be very careful not to inject any other color into the scheme—at least until you've become experienced enough to develop an intuitive feeling for color.

The double-complementary scheme is a natural for open-plan homes. A decorator can vary the importance of the various colors from area to area, achieving both variety and smoother blending with the group of four colors.

For example, imagine the following open-plan house. The first floor contains living, dining, and kitchen areas. Let's use the double-complementary scheme described above: orange, red-orange, blue-green, and blue. The floor of the living and dining areas might have rust (a shade of red-orange) carpeting. The walls could have a pale tint of a slightly grayed orange. In the dining area, bright blue-green can be used as the accent color on chair seats, flowers, vases, and so on. In the living area, blues and blue-greens could be used in varying values and intensities, with bright blue accents. In the kitchen, the red-orange color might be represented by a brick wall with other walls painted the same tint as the living and dining areas. The blue and blue-green might be used in a patterned vinyl floor covering and displayed food containers.

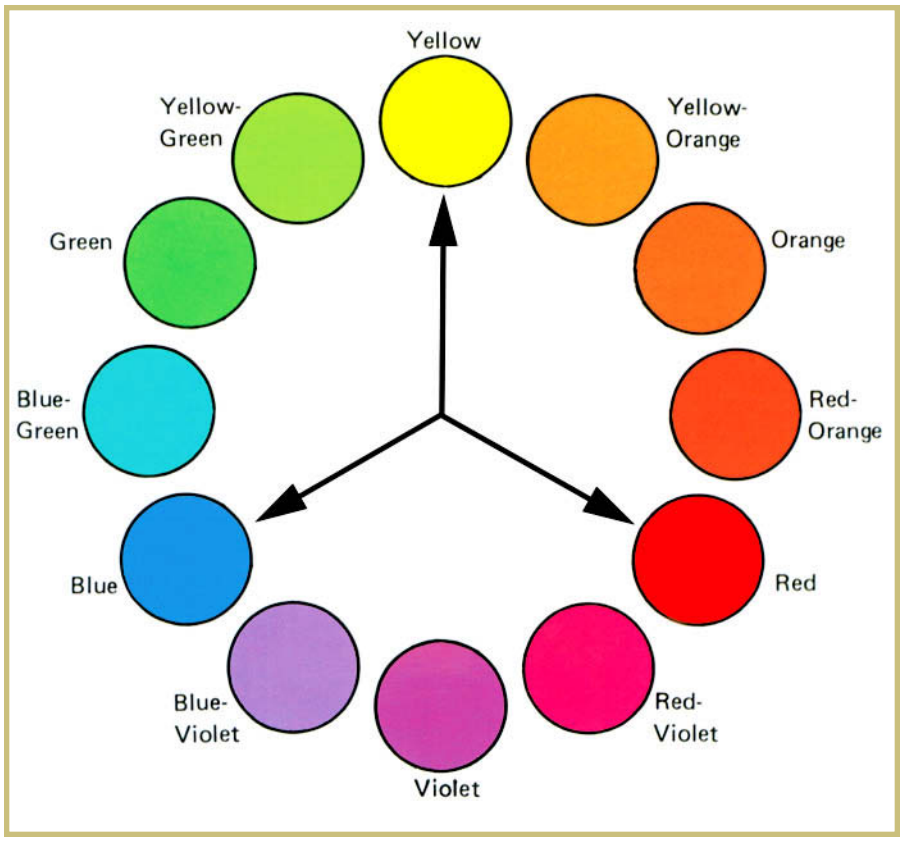
The double-complementary color scheme could be continued to the bedrooms on the next floor. How about a monochromatic blue scheme for the master bedroom? And red-orange and blue-green for the teenage son's room? (Of course, all of these color choices would depend on the desires of the clients.)

The various colors in a double-complementary scheme can be picked up or dropped in different areas throughout a home, but all of the colors work well together. The double-complementary scheme is a truly flexible one, yet it gives a feeling of unity and belonging to each area of the home.

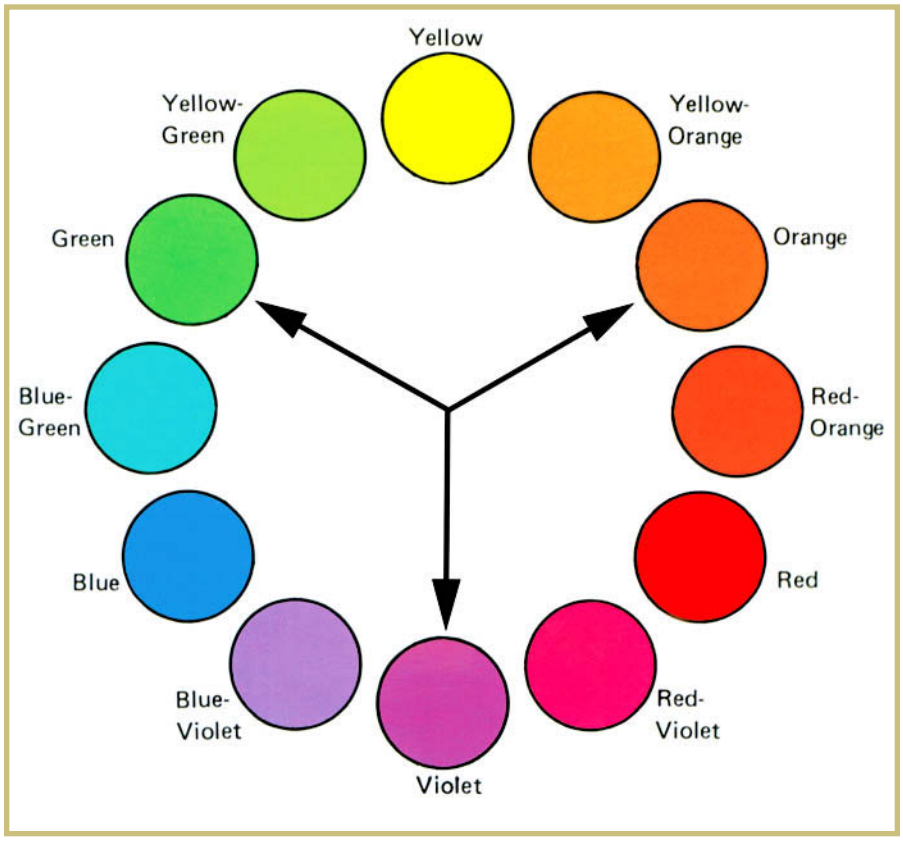
Triadic Schemes

A *triadic scheme* uses three colors that are equal distances from each other on the color circle. You've already learned about two triadic schemes—the primary colors (yellow, red, and blue), as shown in view A of Figure 27, and the secondary colors (orange, violet, and green), as shown in view B. Other triads can also be developed on the circle, such as red-orange, blue-violet, and yellow-green, as shown in view C. One or more of the three colors in a triadic scheme are often grayed, or toned down, leaving only one to be used at full intensity. An example of a grayed color scheme is pictured in Figure 28.

FIGURE 27—View (A) shows a triadic color scheme of the primary colors, and view (B) shows a triadic color scheme of the secondary colors. View (C) shows one of the many other triadic color schemes that you can develop from a color circle.



(A)



(B)

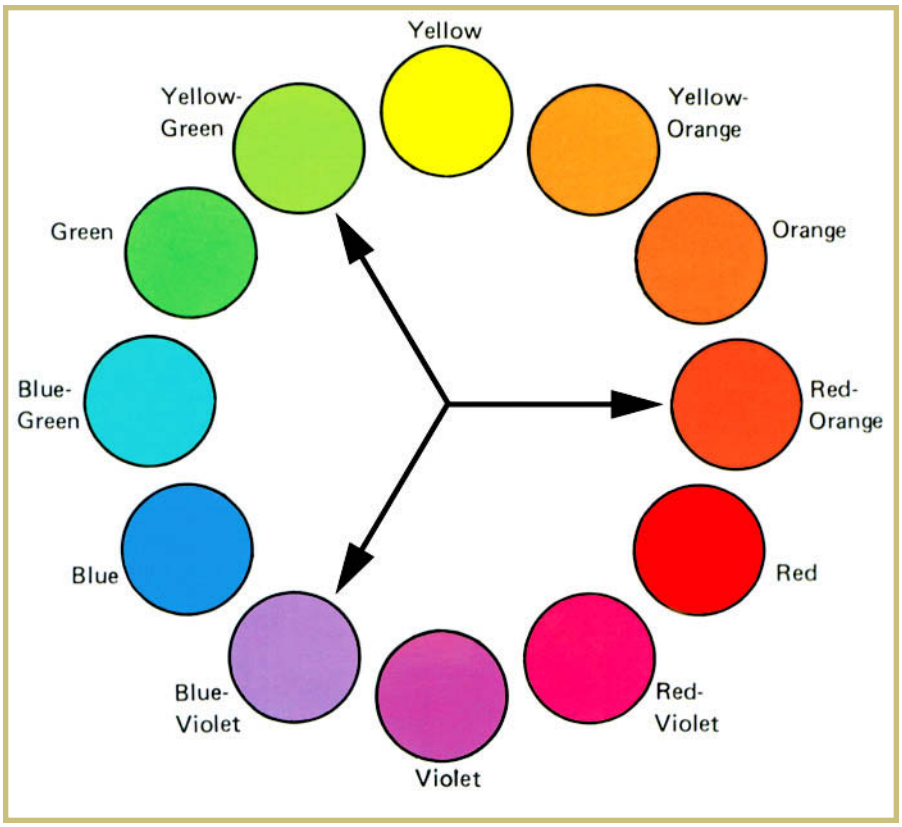


FIGURE 27—Continued

(C)

FIGURE 28—In this bedroom, the orange of the walls has been grayed to provide a softer background from the full intensity of the burnt orange fabric. (Photography courtesy of Drexel Heritage Furnishings)

Warm and Cool Schemes

As you've already learned, a color may be cool or warm in feeling. The cool colors range from violet to green, and the warm ones from yellow-green to red-violet. Red-violet can relate to either the cool or warm colors. It's a unifying color.

If a room faces north, you may wish to use warm colors to liven it. You might consider an analogous scheme of yellow, yellow-orange, and orange. Those colors would bring the illusion of sunshine to the room. If a room faces south, it may get too much warm light. Using analogous cool colors such as blue, blue-green, and green would serve to "cool" the room.

If an existing scheme is too warm or too cool, you can restore balance by adding a cool color if it's too warm or a warm color if it's too cool. Select colors that are triadic, analogous, or complementary, however. Don't make a random selection of a cooling or warming color.

Whatever type of color scheme you use, always be careful that the scheme is well balanced. That is, use some dark, light, and medium values, some intense colors, and some grayed colors, unless you're planning some special effect.

The 60:30:10 Rule

The *60:30:10 Rule* is a guide for portioning the colors in the decor of a room. This rule suggests using a main color for 60 percent of the room, a secondary color for 30 percent, and a subordinate color for 10 percent. For example, suppose you've chosen an analogous color scheme of yellow, yellow-orange, and orange. You select yellow as the dominant color (60 percent) and use that on the walls of the room. You choose yellow-orange for the secondary color (30 percent) and use that on the upholstery. Finally, you select orange for the subordinate color (10 percent) and use that in accent pieces and floral arrangements.

Neutral Schemes

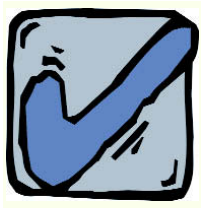
Neutral colors, such as white, black, gray, and toned-down browns and beiges, are sometimes considered *no-colors.* Neutral color schemes are used widely for modern settings. Such decors might sound dull, but they can be quite exciting and sophisticated if handled skillfully. Interest is added to such decors through a wide variety of textures and surface finishes—stubby sofa coverings, natural rugs, textured wall-coverings, glass tabletops, metal tables, and so on. Figure 29 illustrates an example of a neutral decorating scheme.

FIGURE 29—Although the colors in this decor are neutral, notice the different textures used throughout the room. (Reprinted with permission from Pearson Co., a division of Lane)

These neutral colors can also provide perfect settings for the brilliant colors of modern paintings and for the interesting textures and finishes of modern sculpture. Imagine a room with a neutral cocoa-brown rug, light beige walls, a slightly darker beige sofa, a medium-brown chair, and nubby beige-and-brown draperies. The sofa is covered with hand-woven throw pillows in beiges and browns. Over the sofa hangs a modern painting in colors of yellow, yellow-orange, gold, and red-orange. Imagine the interest created by those colors against the neutral setting. In front of the opposite window wall stands a tall, heavily textured sculpture in terra-cotta (a red-orange clay). This sculpture represents another point of visual interest and excitement.

Neutrals such as beige, gray, black, and brown are obtained by mixing complementary colors. Therefore, neutrals have a little of every color in them. Thus, they're compatible with all colors. Since these neutrals and white offer relief from strong colors, they can be used to advantage in most color schemes. Also, the neutrals can be used to separate and harmonize otherwise incompatible colors in a room where you must make the best of some already existing colors in furnishings. As you can see, neutrals play many roles—as a room scheme in themselves, as a background, as harmonizers, and as relief from strong colors. Always keep them tucked away in the back of your mind as another one of your useful color tools.

In the last section of this study unit, you'll examine the effects of color, and you'll learn where you can find inspirations for color schemes. First, please complete *Self-Check 2.*



Self-Check 2

1. The three secondary colors are _____, _____, and _____.
2. To avoid _____ in a monochromatic color scheme, you can add interest with textures.
3. Colors directly opposite each other on the color circle are _____ colors.
4. The band of colors formed when a ray of light passes through a prism is called the _____.
5. Gray is a neutral color, also known as a _____.
6. A room lacking sunshine would need a _____ (warm, cool) color scheme.
7. Colors directly next to each other on the color circle are called _____ colors.
8. How many colors are used in a double-complementary color scheme?

_____

Check your answers with those on page 75.

EFFECTS AND SOURCES OF COLOR SCHEMES

So far you've considered the qualities that individual colors have—hue, value, and intensity. You've also examined how complementary colors affect each other. Now you're going to study some of the effects colors have on each other and how a decorator can use that knowledge to achieve pleasant combinations and to avoid or minimize unpleasant ones.

Effects of Afterimages

When complementary colors, such as green and red, are placed next to one another, they vibrate and intensify each other. That vibration is created by the *afterimage* of a color. An afterimage is a visual image that remains after the original stimulus is removed. The eye sees the complement of a color after being exposed to that color for a period of time. That vibration is fine for an undulating optical-art painting, but such a combination in a room's decor would create a disturbing effect.

So what does the decorator do? One solution is to separate the vibrant colors with areas of neutral colors. Another is to gray, or tone down, one or both of the colors. A light, grayed green wall won't cause that bright red chair to vibrate nearly as much as a bright green wall.

Another effect of the afterimage is seen on neutral colors. A neutral gray wall appears faintly blue-green when a red sofa is placed against it—or faintly purple when a yellow-green sofa is placed there. Look for such effects in various combinations of color samples.

Afterimages

If you would like to have some fun with afterimages, go to

http://www.google.com

Type "afterimages" in the search box.

Other Color Effects

When two colors are placed next to each other, they affect one another. Colors may look duller or brighter, warmer or cooler. Here are a few examples.

- When two colors of different hues, but of the same value, are placed side by side, their common boundary seems to vanish. That effect would be useful in camouflaging a poorly shaped sofa or an ugly fireplace that can't be removed. The badly shaped sofa could be in violet of the same value as the blue wall behind it. The wall next to or around an ugly green marble fireplace can be painted a beige of the same value as the fireplace.
- One color can be made to look different by placing different colors next to it. Gold looks different next to blue-green than it does next to red-violet because of the afterimage effect.
- Two colors can be made to look more alike by placing two different colors next to them. For example, two different shades of rose (one rosier than the other) can be made to look alike by placing the rosier one next to orange (to cool it down slightly because of the blue after-image) and the other next to blue-green (to warm it up slightly with the red-orange afterimage). That effect can be used to unify slightly different colors in a room if you want them to look the same.

How the color of an object appears depends on how much light reaches the object. In a dark room, the object isn't visible. As light increases, the same object appears to be different colors under different degrees of light. A red apple, for instance, appears almost black in dim light. As the light increases, the apple appears increasingly red. What happens is that certain waves of the light striking the object are absorbed by the object. Other waves are reflected. It's the reflected light waves that determine the color that people perceive the object to be. The intensity of the color is determined by the amount of light being reflected. In very dim light, such as dawn or dusk, very little light is present, so very few light

waves are reflected from an object to a viewer's eyes. As the presence of light increases, more light waves bounce from the object to the eyes.

Some surfaces absorb more light waves than others. The more a surface absorbs light waves, the lower its intensity of color. Generally, a smoother surface reflects more waves than a rough surface. Therefore, the color of a smooth surface appears more intense. The more irregular the surface, the less intense its color will appear.

Keep this principle in mind when you're inspecting small swatches of fabrics and wallcoverings in an attempt to match them to a paint chip or other fabric samples. A nubby orange fabric sample that exactly matches your paint sample will look a little lower in intensity when made into a sofa cover, while that highly reflective, slick, orange silk sample, which now exactly matches your paint chip, may prove to be overly bright when made into a sofa cover.

Using a Color Wheel

When you're dealing with clients, you must first determine what colors they may have in mind for their decorating projects. You should decide what colors they like and dislike, and you must evaluate the size, scale, and patterns within the room.

Response to color is a very personal reaction. Some individuals use a lot of color, while others shy away from color and prefer neutrals, which they see as safe colors. Some prefer darker values, while others favor lighter values (Figure 30). The point is that you must carefully determine how your clients feel about different colors and color schemes.

FIGURE 30—Lighter values of the complementary color scheme red and green create a very pleasing, restful combination. (Reprinted with permission from Lexington Furniture Industries)

A good tool to use with your clients is a color wheel (Figure 31). This tool allows you to display various color schemes, like complementary and analogous, in a variety of base colors.

Your job as a decorator is to confidently use your knowledge of color and the effects you can achieve. Color schemes are created in a variety of ways by starting with the basic color circle concepts. For instance, a monochromatic color scheme is a group of colors using only one basic color with different values and intensities. Let's use red as the example: by adding black to red, you create a rich jewel shade of burgundy. By adding white to red, you produce pink. Burgundy

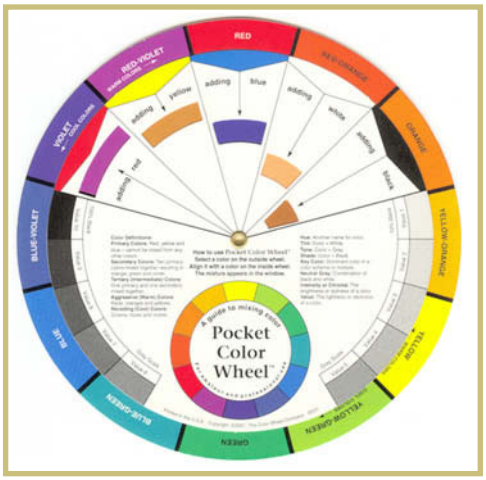
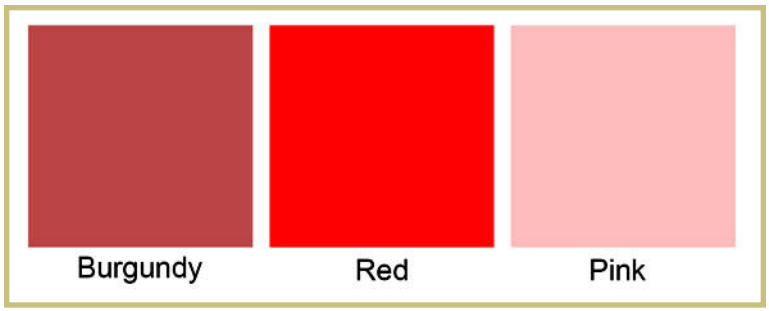


FIGURE 31—A color wheel is an important tool for an interior decorator.

to red to pink is a color scheme that's warm and harmonious (Figure 32). It's a simple monochromatic decorating scheme that brings unity to a room. Degrees of contrast can create exciting accents in intensity.

FIGURE 32—A monochromatic color scheme of burgundy, red, and pink adds warmth and harmony to a room.



A good application for this color scheme is a bathroom with soft rose ceramic tile on the floor, deep rose bathroom fixtures, and burgundy laminate bath cabinets. The bathroom could be accented with burgundy throw rugs and towels. It would be simple yet dramatic.

When you develop a color scheme like this one for the bathroom, use your color wheel as a visual aid when discussing the scheme with your clients. Pay particular attention to a client's initial responses to different colors. You can also use a color wheel to provide a quick reminder of how colors look together. Perhaps a client is trying to match a particular shade of green, but doesn't have a color sample. By using your color wheel and explaining the different parts and relationships between the colors, you can work with the client to determine the intensity and value of the color so that your color scheme can progress.

Having a tool like a color wheel at your disposal will set you apart as a knowledgeable professional by helping your client feel comfortable with color.

Online Color Visualizer

To help your clients visual different color schemes, you can use resources on the Internet. For example, the Web site of The Sherwin-Williams Company has some great resources that allow you to

- Paint an interior of a room to see the effect different colors choices will make
- Paint an exterior to try sample color combinations on a house
- Find a color, among over 1,400 choices, and see which combinations they suggest
- View rooms with useful color information included

To access the Web site, go to

http://www.sherwin-williams.com.

Your knowledge of color should be evident to your client when you start asking appropriate questions, such as "What colors are you most comfortable with?" By getting the client's reaction to various colors, you can then use your expertise to best advise the client and create the look and feel the client feels comfortable with.

The color circle is the basis for color education. The more familiar you are with the color circle and the use of a color wheel, the quicker you'll be able to zero in on a client's preference. As a decorator, you'll soon be able to easily pull colors from a wall of decorative fabrics that will miraculously work together before the client's eyes! This "miracle" is simply the result of experience and knowledge of the rules of color theory. Display your color wheel in the showroom, point to it, and let your client handle it and spin the wheel to take in all the colors, intensities, and values represented on the wheel. The color wheel is an excellent starting point for a conversation about color. Sometimes the color wheel can even help an indecisive client come to a decision. Your client will be very impressed with your ability to use color in combinations to create a specific look!

The Rule of Three

You've been learning about various ways to combine color to produce a specific effect. Now it's time to take the color wheel and put fabric, carpet, paint, and wallcovering together to create an interesting room with a color scheme. An easy rule to employ is the *rule of three.* This rule simply means that you choose three colors and use them throughout the room in various patterns, textures, values, and intensities.

Take a look at the room in Figure 33. The basic color scheme is red, black, and cream. The walls and the sofa are a neutral creamy color, but the accessories (throw pillows, wall hangings over the sofa, and the end table) bring in the black and red colors. The carpet unites all three colors in an interesting geometric pattern. In addition, the decorator for this room varied light colors and dark colors for an interesting look that adds variety, interest, and a cohesiveness to pull the room together.

FIGURE 33—The color scheme of this room illustrates the rule of three.

Figure 34 also employs the rule of three. The colors—red, green, and white—give the room a bright, playful appearance. Although the walls and the floors are dark, the white bed, pillars, and woodwork provide a bright look. The window treatment includes two of the three colors, and the bed linens incorporate all three colors, which unites the room well.

FIGURE 34—This bedroom illustrates another example of the rule of three.

Coordinated Fabrics

Most fabric manufacturers coordinate their fabrics within a grouping so the colors relate to each other. For example, several fabrics within a group include the same colors. Manufacturers often have sample books that group these fabrics, along with suggested wallcoverings to match the fabrics within the group. *Color trends* (those colors that are currently popular in home furnishings and clothing) determine what groups of color you find in carpeting, upholstery fabrics, drapery fabrics, and wallcoverings.

In Figure 35, a primary color scheme was used for the room. Bright red and crisp primary blue are toned down with the light neutral walls. The glass coffee table and room divider also serve to provide a contrast of textures and to brighten the room. The drapes incorporate both blue and red, along with a third color (gold) to provide variety.

FIGURE 35—A red, blue, and gold color scheme is used in this living room.

Many color schemes begin with one fabric or one wallcovering. From this one pattern—print, plaid, or stripe—a decorator pulls out three basic colors from the material and begins working with carpet, paint, and coordinating fabrics that repeat the same color scheme. If you use this idea of three main colors, your job is fairly easy to create a room with interest, excitement, and a finished, cohesive look.

As you visit homes, offices, banks, restaurants, hotels, and other buildings, look for applications of the rule of three. Observe how other decorators use this rule to create a finished look. Practice putting fabrics, wall paints, and wallcoverings together until you feel comfortable combining different groups of three colors.

Inspirations for Color Schemes

In addition to the color circle, you have many other sources that you can draw on for color scheme ideas. Color schemes frequently require special inspiration. After you've developed a few color schemes, you may feel, momentarily, that there are no new schemes to use. You should then turn to some of the following sources to spark your creativity.

Artwork

There are many kinds of artwork from which a decorator can glean ideas for color schemes. For inspiration, visit art galleries and museums and look through art books and art magazines such as *American Artist.*

You may not like some or all of the paintings and other works of art illustrated in this study unit, but remember that you're examining them for color only.

Remember that paintings—and other sources mentioned here—are just taking-off points to spark your imagination. The purpose of examining pieces of art is to help you see new and different color combinations, possibly in different proportions than you've seen before. In some schemes, you might use the colors in the proportions in which they appear in the painting or design. In others, you might change the proportions or dull (tone down) some of the colors to make them more livable.

Study the artwork in Figure 36. Pay particular attention to the artist's use of color combinations. Think about how you might use these colors in a room you're decorating.

Art Resources

Use the Internet to examine art resources for possible color combinations. For example, you can find 20,000 contemporary art pieces, at **http://www.picassomio.com.**

FIGURE 36—All of these paintings have interesting color combinations that might be used in the decor of a room. From top left are a detail of a Classic oil painting, Asian artwork, an Egyptian wall carving, a Classic oil painting, and another piece of Asian artwork.

Crafts of the Past

You can find inspiration in the many colorful designs in crafts of the past, ranging from the ancient designs of Egypt, Greece, Rome, and South America, to the more recent designs of Africans and Native Americans (Figure 37). Again, libraries, bookstores, museums, and the Internet provide source materials.

FIGURE 37—Crafts of antiquity and modern crafts can provide inspirations for color schemes. Clockwise from upper left are Native American pottery from the Southwest, beaded African art, an ancient Egyptian urn, and an African basket.

Although the ancient painters and artisans didn't have the range of colors available to modern human beings, the way in which the ancients combined colors may be new to you. For example, an Egyptian tomb painting from 1900 B.C. shows a person hunting at a pond full of ducks. The pond itself would furnish inspiration for many color schemes. The pale blue-green water contains ducks in shades of gold, an earthy red, pale lavender-blue, blue-green, and white. This lovely pastel scene would translate beautifully into a room of Louis XIV silks and brocades.

Another good source is Native American art. Rugs, tapestries, sand paintings, ceremonial dolls, pottery—all can be drawn upon for ideas. A beige Navajo tapestry with black, white, blue-green, bright red, and yellow could translate into an exciting contemporary room. A scheme based on a Hopi pot with black and red designs might be used for an Asian decor.

And don't forget the fascinating quilts and woven coverlets of early American colonists (Figure 38). These would be appropriate inspirations for Early American and Colonial rooms. Study some of these combinations for decorating ideas.

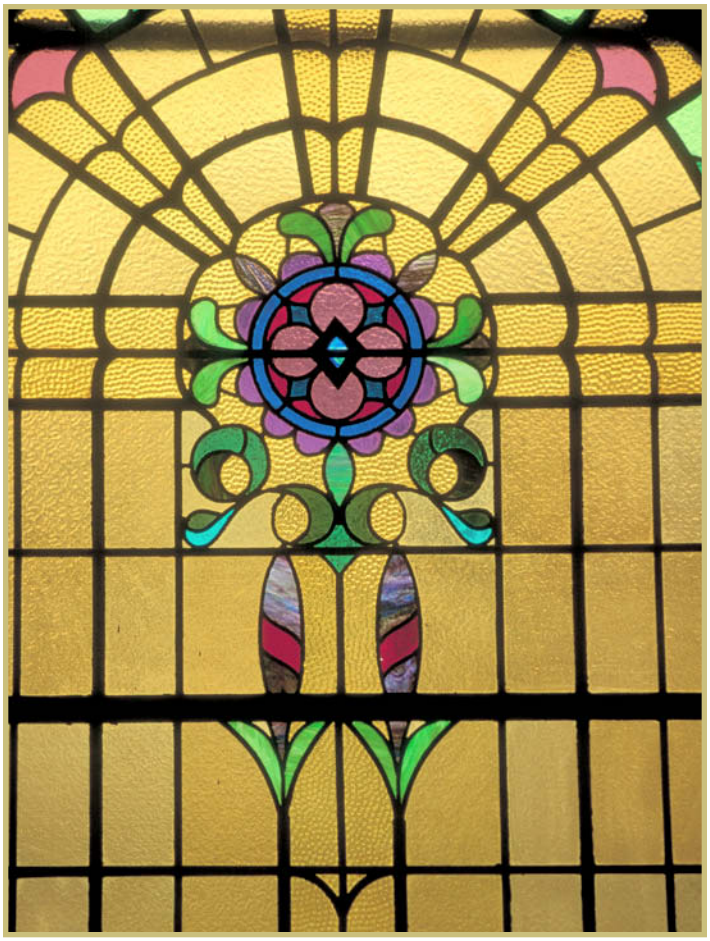
FIGURE 38—Quilters have a knack of combining interesting color schemes.

Architecture

Buildings may also provide you with ideas for color schemes. Sometimes architects get very creative with the materials they use for different structures. For example, the building in Figure 39 is located in Mexico City. The colors used in the design of the upper floors could inspire creative decorators. Also consider looking at such architectural elements as stained-glass windows (Figure 40). Some of these windows are real works of art with wonderful color schemes.

FIGURE 39—The designers of this building were very creative in their use of color and pattern.

FIGURE 40—Stained-glass windows can be an excellent source of color ideas.



Nature

Imagine a field of gold stubble sticking up through white snow framed by a sapphire blue sky. What an inspiration that scene and many others can provide (Figure 41).

But landscapes and seascapes aren't the only source of inspiration from nature. The creatures of nature can also be called forth for ideas. Butterflies and moths, for example, provide textural sources as well as color sources. The shaggy body, feathering antennae, and smooth, dull wings of the Cecropia moth (Figure 42) illustrate a beautiful color scheme of cream, cocoa brown, black, white, and red-orange. The red-spotted purple butterfly (Figure 42) provides an entirely different scheme of orange-red, black, white, and purple. You don't need to be knowledgeable about butterflies or even know their names to look at them or inspect pictures of them for color inspiration.

FIGURE 41—Elements in nature can provide a wealth of ideas for coordinating colors.

(A) (B)

FIGURE 42—There are approximately 20,000 species of butterflies—enough to give an interior decorator plenty of ideas for color schemes. View (A) shows a Cecropia moth; view (B), a red-spotted purple butterfly.

To view thousands of pictures of butterflies, simply go to a search engine like

http://www.google.com

and type in the words *butterflies* and *pictures.*

Room Elements

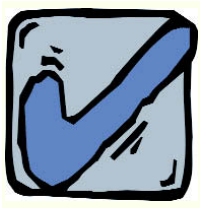
Don't forget design and color sources that will constantly surround you as a decorator—fabrics, rugs, and wallcoverings. Even though you may not use a particular fabric, rug, or wallcovering in the room you're planning, one of these may provide inspiration for a color scheme. That charcoal-gray fabric with yellow and white flowers may spark a scheme. Or that rug with muted pastel shades may provide a perfect color scheme for that French Provincial bedroom. The colors in that paisley wallcovering may be just right for the cozy and slightly exotic den your clients want.

Color schemes are everywhere around you—in artwork, in crafts, in architecture, in nature, and in room elements. Just look around and you'll discover ideas you can use as an interior decorator.

Favorite Color Schemes

Some of the most popular color schemes are the simplest. Consider these possibilities when you're choosing the colors for a room:

- Tan and black
- Pale blue and a neutral color such as tan, white, brown, or black
- Navy blue and white
- Vibrant bright colors in splashes around a more monochrome room
- Pink and khaki
- Yellow, red, and royal blue



Self-Check 3

1. Two colors can be made to look more alike by placing two _____ colors next to them.

2. A tool that allows you to display various color schemes for your clients is a _____.

3. Placing two complementary colors next to each other creates a visual vibration. This vibration is caused by the _____ of each color.

4. The color of an object depends on how much _____ reaches that object.

Check your answers with those on page 75.

PRACTICE EXERCISES

These practice exercises include experiments and color projects in which you'll experiment with watercolors to become more familiar with colors and how to use them in decorating. Completing these exercises will greatly aid your understanding of color. Be sure to perform all of the exercises before going on to the examination.

Note: Do not submit your answers to these exercises. They're for your benefit only.

Learning to Use Color

Your Color Sampler

By now, you should have a reasonable number of samples in your collection. Before you begin these exercises, sort your samples by color. For example, put all of the reds in one pile, including all tints (pinks), shades (maroons), and varying intensities of red. Put each set of colors in a folder or holder of some kind. You can use standard file folders, large envelopes, or even plastic bags.

Sorting your samples will help to develop your color discrimination. Does that blue have a touch of green? Put it in the blue-green bag. Use these color samples as you complete the practice exercises. Wherever possible, try to find colors similar to those mentioned in the exercises. If you can't find one, try to imagine that color. These activities will help you develop a greater degree of color perception, thus enabling you to develop interesting and subtle color schemes.

Don't stop collecting. Every time you see an interesting sample, put it with your collection.

About Watercolors

One of the best ways to expand your understanding of color is to mix and use colors yourself. In "Part 1: Color Experiments," you'll find some projects for experimenting with methods for using and mixing watercolors. After that, you'll go on to some projects in which you'll develop color

schemes and paint your schemes onto pictures of rooms to see how they look. First, let's take a minute to get acquainted with watercolors.

Most basic watercolor sets contain red, orange, yellow, green, blue, violet, white, and black. If you need a value of brown, you must mix it yourself, starting with equal parts of blue and orange and adjusting it until you achieve the color you want.

Most people use watercolors as children, well before they begin school. As a result, most people tend to think of watercolors as playthings. In a way, they are. Even as adults, people can find great fun and fascination in color and color experiments. But to students of art and interior decorating, watercolors are much more. They're a professional tool to be kept at hand throughout a decorating career to express ideas, to experiment, and to bring into public view the visions of the mind.

These paints are called watercolors because they must be mixed with water before they can be mixed and used. There are two important rules to follow in using watercolors:

1. *Keep the colors clean.*

   Always clean your brush in clear water between dips into various colors. Keeping your brush clean will prevent the blocks of color in the box from contaminating other colors. A clean brush will also keep the colors that you've mixed in jar lids or elsewhere from being contaminated by other colors. Colors quickly become contaminated when you dip an unclean brush into another color. Keeping the colors clean is very simple to do. Not keeping them clean quickly makes them useless.

2. *Control the color by controlling the amount of water you use.*

   Before dipping your paintbrush into one of the blocks of paint color, dip the brush in water. The amount of water on your brush controls the amount of paint it will pick up. If your brush is dripping with water, you'll pick up only a dilution of color. If you shake the excess water from your brush, you'll pick up more. If you wipe most of the water from your brush, you'll pick up the most color.

Similarly, once you've applied color to the paper on which you're painting, you can still control that color further. If the color is too strong, add water to it right on the paper to help make it lighter. If there's already a lot of water in it and it's too strong, blot it with a paper towel; then, before it dries, add more clear water, if necessary, and blot it again.

Watercolor isn't fixed onto the paper until all water has evaporated from it. If you paint first in one color and then immediately paint a second color right up to the edge of the first, the colors will run, or bleed, into each other. Painters use this characteristic of watercolors to create lovely effects. As an interior decorator wanting to show pure blocks of color on various furnishings, you don't want your colors to run. To speed the drying process, try to deposit as thin a layer of watercolor onto the paper as possible. Then, don't carry a second color all the way to the edge of a color you suspect is still wet.

With just a little practice, you'll undoubtedly find yourself really enjoying your watercolors.

Part 1: Color Experiments

Part 1 includes a series of color experiments you can perform with your watercolors. The purpose of these exercises is to make you more sensitive to color and to help you understand and remember color relationships and color characteristics.

First, assemble the following materials:

- Watercolors and brushes
- Container of water
- Paper towels or rags
- Small containers, such as jar lids, for mixing colors (You can use the lid of your watercolor container to mix some colors, but you may need additional mixing areas.)

> ***Note:*** You can print the illustrations for these exercises from the PDFs accessible from a link on your "My Courses" page.

Color Experiment 1: Primary and Secondary Colors

1. Print a copy of Figure 43.

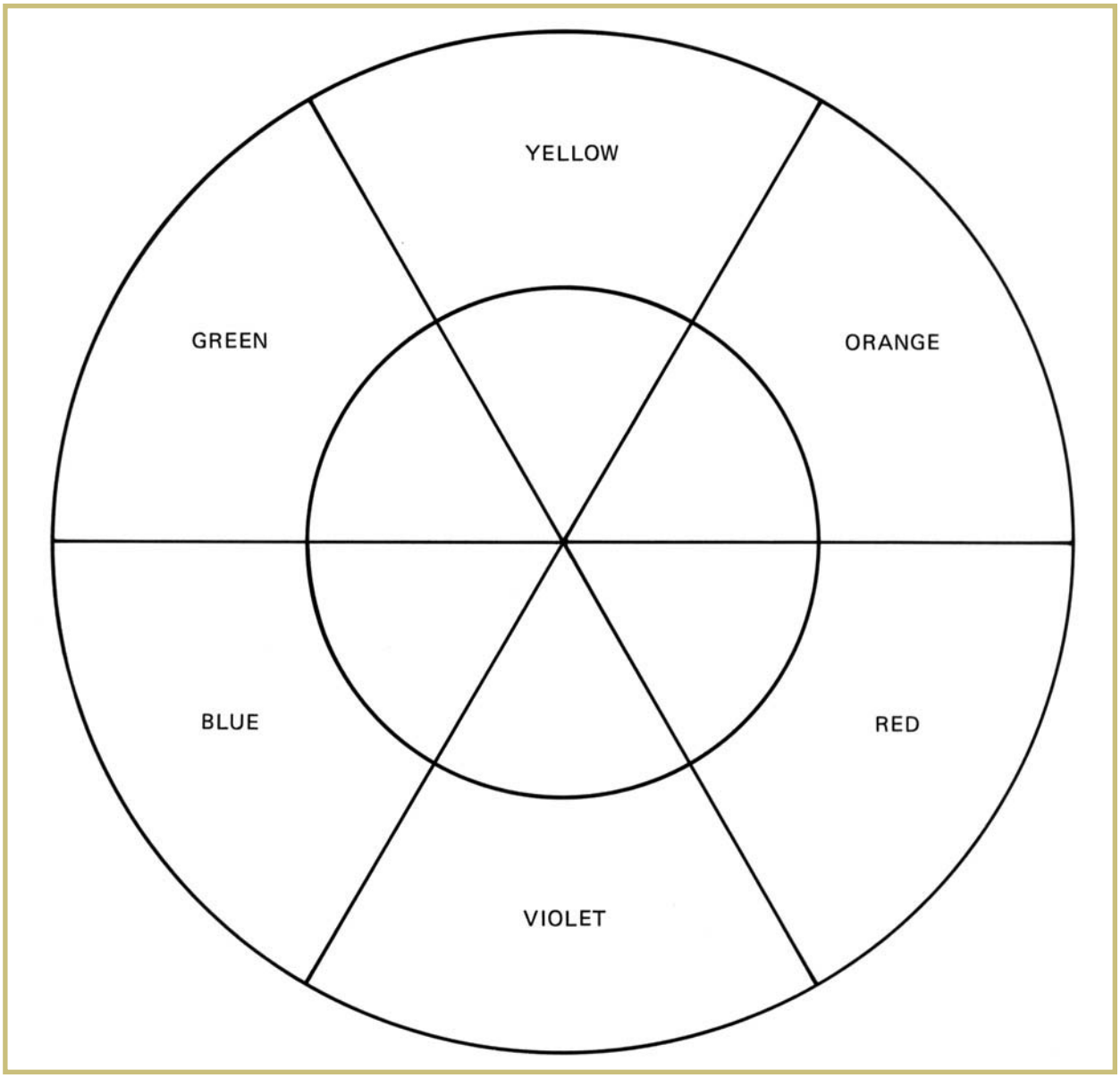


FIGURE 43—Blank Color Circle

2. Place your brush in the container of water. Transfer three equal little pools of water to your mixing areas in jar lids or the lid of your watercolor box.

3. With your brush, transfer some red pigment to one pool, yellow to the second, and blue to the third. Try to transfer an equal amount of color to each pool. You now have pools of the primary colors—red, yellow, and blue. Be sure to clean your brush every time you change from one color to another. First wipe off excess moisture and pigment with your towel or rag. Then dip the brush in clear water and wipe it again. Repeat until it's completely clean.
4. In clean containers, make secondary colors by mixing the primaries—two at a time. Mix equal amounts of red and yellow to produce orange, red and blue to obtain violet, and blue and yellow for green. Clean your brush each time you change color. You now have six pools of color—three primary colors and three secondary colors.
5. Paint a swatch of each of the six colors in the outer rim of the color circle you printed. Don't forget to let one color dry before you paint next to it.

Color Experiment 2: Intensity

In this study unit, you learned that colors opposite each other on the color circle are called complementary colors. You also learned that a color's intensity can be dulled by mixing in a bit of its complementary color. Let's try it.

1. Mix each of the six colors with a little of its complement to see how it dulls the color.
2. Paint a swatch of each dulled color in the central pie shapes of the color circle you made in Experiment 1. Notice how dull the pie-shaped swatches are compared with the colors at full intensity.

Some of the dulled colors may not be exactly true because you may not have mixed exactly equal amounts of each color. But don't be concerned about that. The important point here is to understand where the slightly grayed colors, such as gold and maroon, come from.

Color Experiment 3: Values in Black and White

In this experiment, you'll be working with the values of colors.

1. Print a copy of Figure 44.

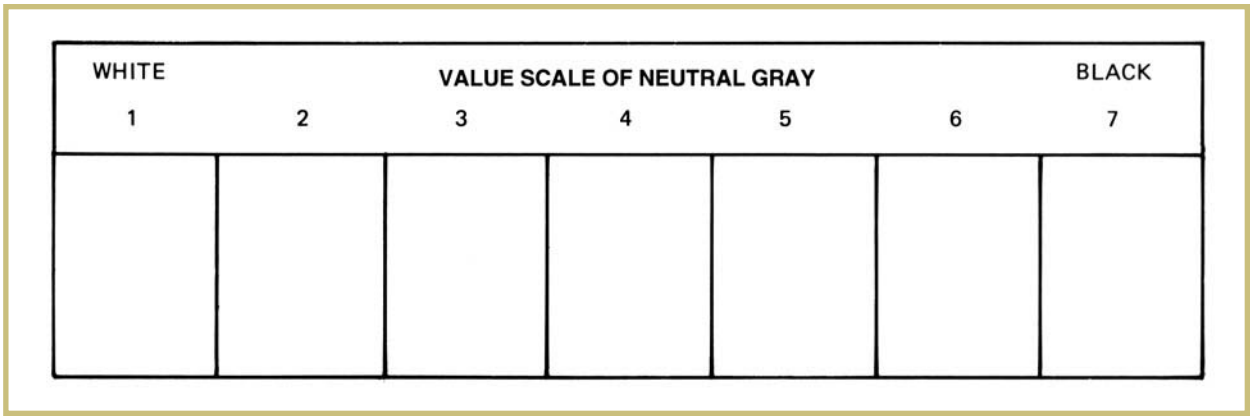


FIGURE 44—Value Scale of Neutral Gray

2. Place water and white paint in one mixing area and water and black in another.
3. On your printed copy of Figure 44, paint the extreme left block white and the extreme right block black.
4. Make a value scale similar to the one in Figure 5 of this study unit. To do this, mix five shades of gray between white and black. Mix a very small amount of black with white to obtain a light gray. Paint a swatch on scrap paper to see how it looks. Continue adding black and paint trial swatches until you obtain five distinctly different shades of gray—ranging from light gray to almost black.
5. Paint these shades on your value scale. The scale should range from white on the left with black on the right, with shades a gradually darker gray in between.

Color Experiment 4: Values in Color

In this experiment, you'll translate the values of Experiment 3 into a color.

1. Print Figure 45.

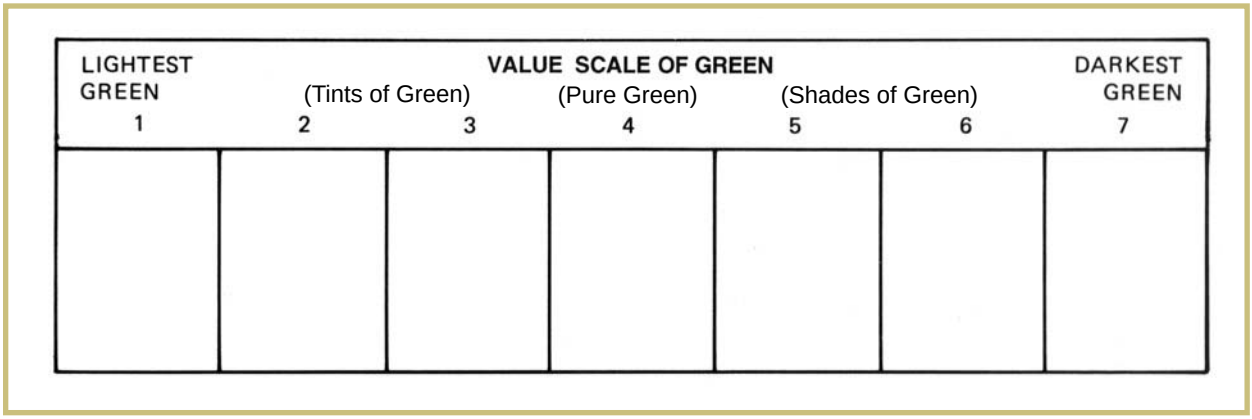


FIGURE 45—Value Scale of Green

2. Mix some green in a mixing area. Paint the green in the middle rectangle of the value scale (block 4).
3. To the green paint in the mixing area, add a little black paint and paint block 5 with this mixture.
4. Add a little more black paint for block 6 and even more for block 7.
5. Clean your brush and mixing areas.
6. Mix some more green paint. To this green, add a little white and paint block 3 with this mixture.
7. Add a little more white paint for block 2 and even more for block 1.

You should now have a value scale of green, shading from the lightest green tint at left to the darkest green shade at the right. The values should be similar in lightness to the value scale in white, black, and grays that you made in Experiment 3.

Color Experiment 5: Contrast

1. Cut out the black, white, and gray value scale you made in Experiment 3.
2. On the back, number the values 1 through 7 and then cut the scale into seven blocks.
3. Place two blocks next to each other in various combinations to see which combinations give the greatest contrast and which the least. You'll find that values 1 and 7 form the greatest contrast, and values 4 and 5, for example, are so close in value that they almost merge.
4. Cut out and number the green value scale you made in Experiment 4.
5. Combine the green values as you did the gray values. See how the results are the same for the green color scale as those using the black, gray, and white scale. Values 1 and 7 in the scale form the greatest contrast, and neighboring values provide the least contrast.
6. Translate those values in your mind into the elements of a room. Do you want a feature to stand out? Use strong color contrast. Do you want to diminish the feature? Use close values.

Note: Keep your two value scales for the next experiment.

Color Experiment 6: Balance

This experiment will help you to see how to balance the visual weights of colors. As you've learned, dark values seem heavier than light values. Unless you use them in proper proportions, a sense of imbalance will result.

1. Take numbers 1 and 7 from your gray value scale. White is the lightest value and black is the darkest. Seen in equal amounts side by side, the black block seems much heavier than the white block.

2. Cover part of value 7 with value 1. Do the values now seem balanced in visual weight? Does the smaller area of value 7 still seem heavier than the larger area of value 1? If so, cover more of value 7 until you feel you've achieved visual balance. At that point, a much larger portion of value 1 should be showing.
3. Perform this experiment with other combinations of values. First use two values. Then combine three or four. See how much of each value is needed to visually balance the other.
4. Take the values from the green value scale and repeat the experiment. Think of the values in terms of walls, floor coverings, sofas, and accents. How much of each value is needed for good balance?

Use your judgment on this. It's important to develop and be able to trust your own critical eye in such matters. When you've completed your own combinations, turn to Figure 51 for some examples of good balance.

Part 2: Color Schemes

Figures 46 through 51, referred to in the following projects, are available for printing from your "My Courses" page.

Understanding Your Color Schemes Projects

You're now going to apply the color principles you're learning to a decorating scheme. On the following pages is a series projects that require you to develop a color scheme for a number of rooms.

For each project, read the description of your client's requirements. Then, using your color wheel for reference, plan a color scheme for that client. Use your watercolors to paint the picture of the client's room in the colors you've selected. For the most effective learning, print several copies of each room so you can try different color schemes to see, side by side, which is most effective. In some cases, you may want to try different colors for the same room. In other cases, you may simply want to try different ways of distributing one color scheme.

These projects allow you to be daring and experimental. Do you really want to see what that room would look like with midnight blue walls and pale accents instead of the other way around? No harm will be done if you paint an extra picture just to satisfy your curiosity. It's better to satisfy your curiosity with your watercolors now than on a client's walls later!

Overall, however, you'll be far more pleased with the results if you review, remember, and apply all that you've learned up to this point about the use of color in a room and how best to distribute it. You'll find that your color schemes look well-planned when you follow the professional principles you've learned in developing them.

You're the Decorator 1: Analogous Color Scheme

Mr. and Mrs. Trager have a living room that faces south and is flooded with warm light. They want to give it a cooler look. Mr. Trager dislikes strong, dark purples. Mrs. Trager likes all colors. Develop an analogous color scheme for their room, shown in Figure 46. Then paint your plan on your printouts.

Use cool colors, such as green, blue-green, and blue. Avoid dark purple because of Mr. Trager's dislikes, unless you use tints and lowered intensities of it.

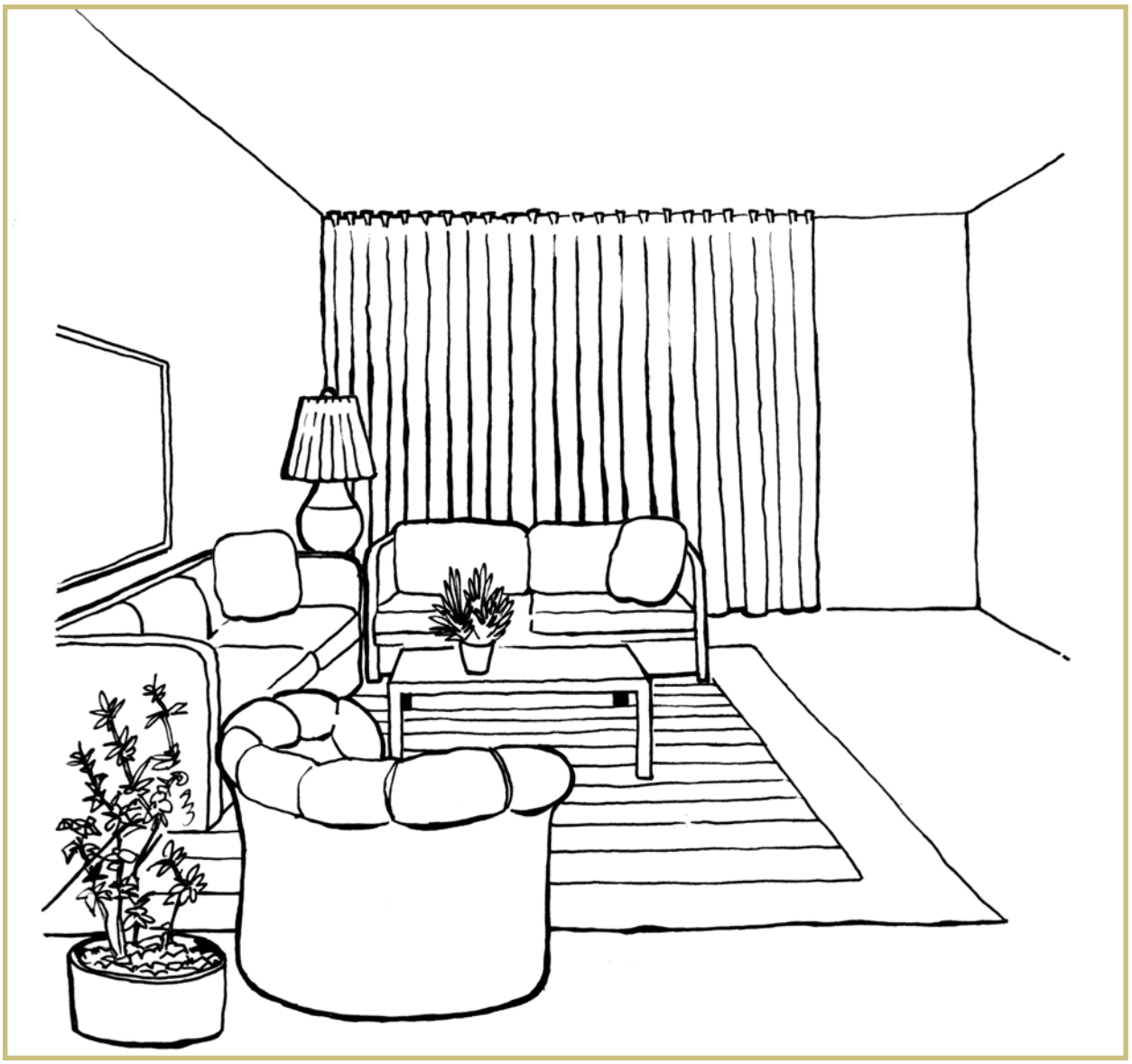


FIGURE 46—Mr. and Mrs. Trager's Living Room

You're the Decorator 2: Complementary Color Scheme

Emily Black called you to redecorate her young daughter's bedroom. The daughter can't stand yellow, but she likes all other colors. Develop a complementary scheme for her bedroom, shown in Figure 47. Use any complementary pair except yellow and violet since the daughter dislikes yellow.

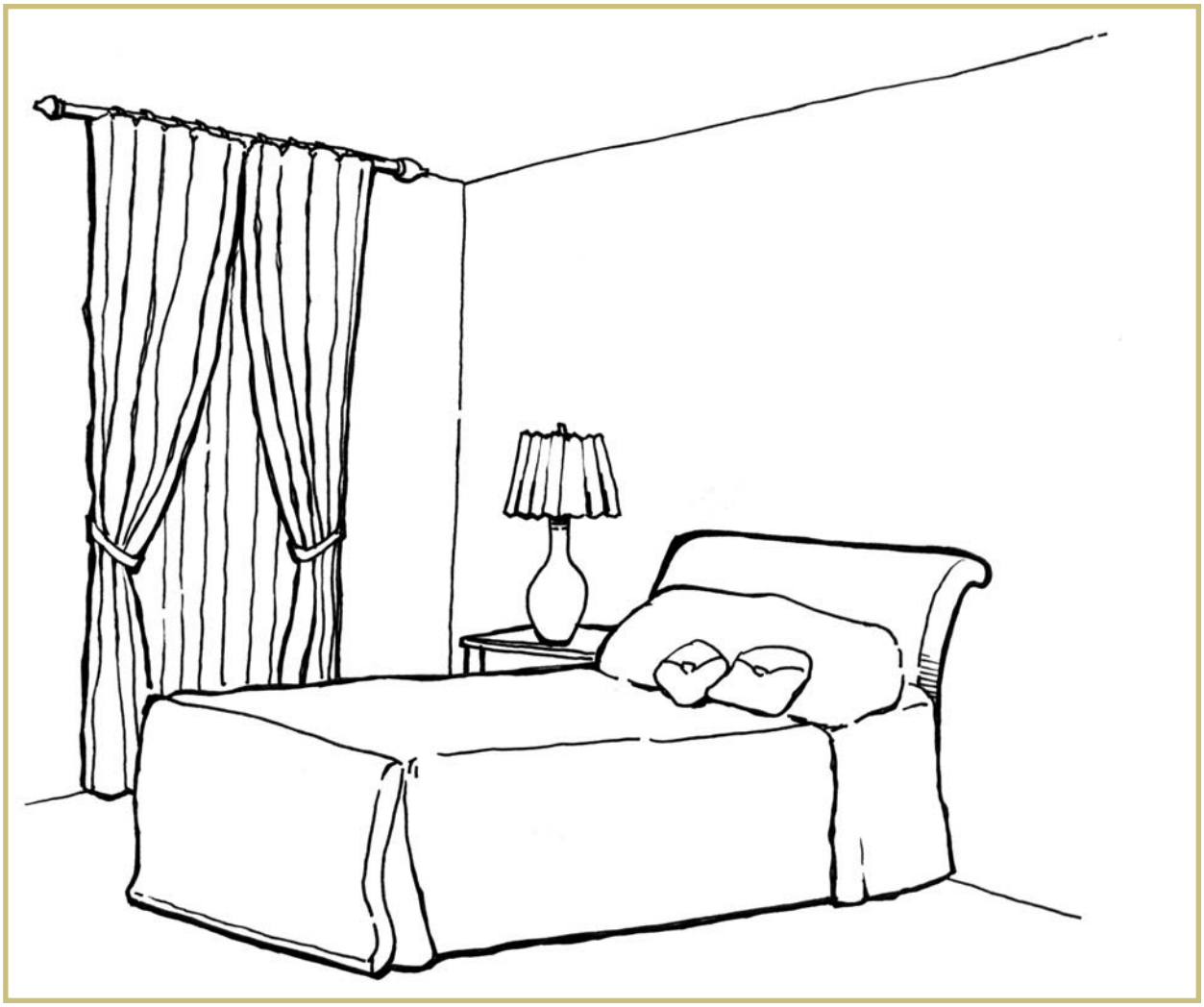


FIGURE 47—Emily Black's Daughter's Bedroom

You're the Decorator 3: Split-Complementary Color Scheme

Sylvia Evans has a large family room that she wants you to redecorate completely. Here are the color likes and dislikes of Ms. Evans and her family:

Likes	Dislikes
Red	Orange
Turquoise	Blue
Chartreuse (yellow-green)	Violet
Olive (a grayed yellow-green)	Yellow
Maroon (dark red)	

For this room, shown in Figure 48, develop a split-complementary scheme.

One possible combination that will please everyone and not displease anyone is red (including maroon, perhaps?), yellow-green (including olive?), and blue-green.

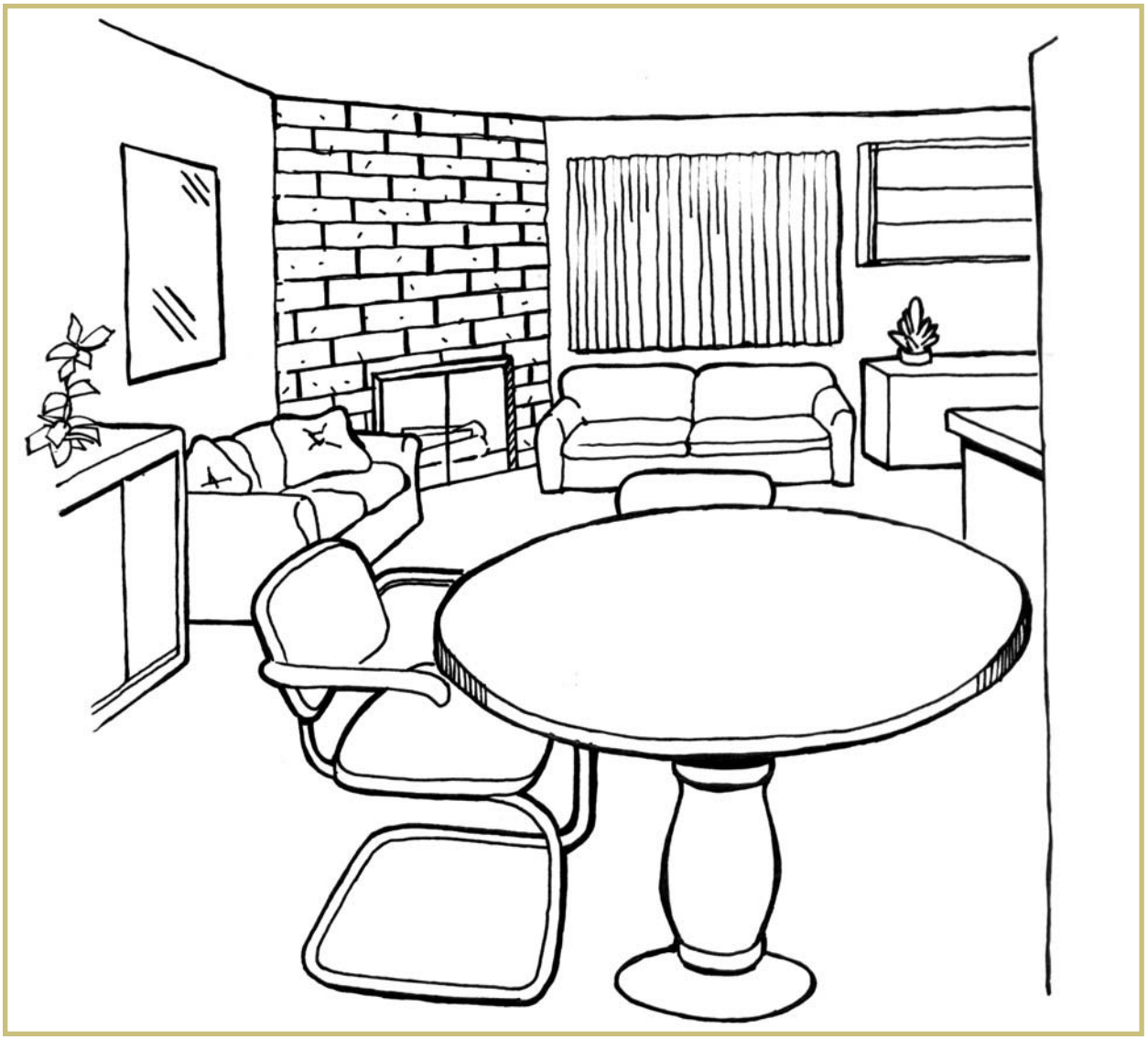


FIGURE 48—Sylvia Evans's Family Room

You're the Decorator 4: Double-Complementary Color Scheme

Two young women, Jane and Grace, share an apartment that you're going to redecorate. Each woman has a separate bedroom, but they share the living room area (Figure 49). Both

bedrooms open onto the living room. Jane loves blues, but can't stand yellow-greens. Grace likes soft peach tones, but doesn't like blue-greens. Develop a double-complementary scheme that can be used for the living room and the bedrooms. Remember that not all the colors must be used in every room.

The double complements blue and orange and yellow-orange and blue-violet would work nicely. This color scheme would give you the blues that Jane likes and the soft peaches (orange tones) that Grace likes, while avoiding the yellow-green Jane dislikes and the blue-greens Grace dislikes. Blue could be the major color for Jane's room and peach tones could be used for Grace's.

FIGURE 49—Jane and Grace's Living Room

You're the Decorator 5: Triadic Color Scheme

Joan and Ed Wrightson want to redo their Early American living room (Figure 50), now done in earth colors and greens. Joan dislikes orange, but Ed likes all colors. What triadic scheme would you suggest?

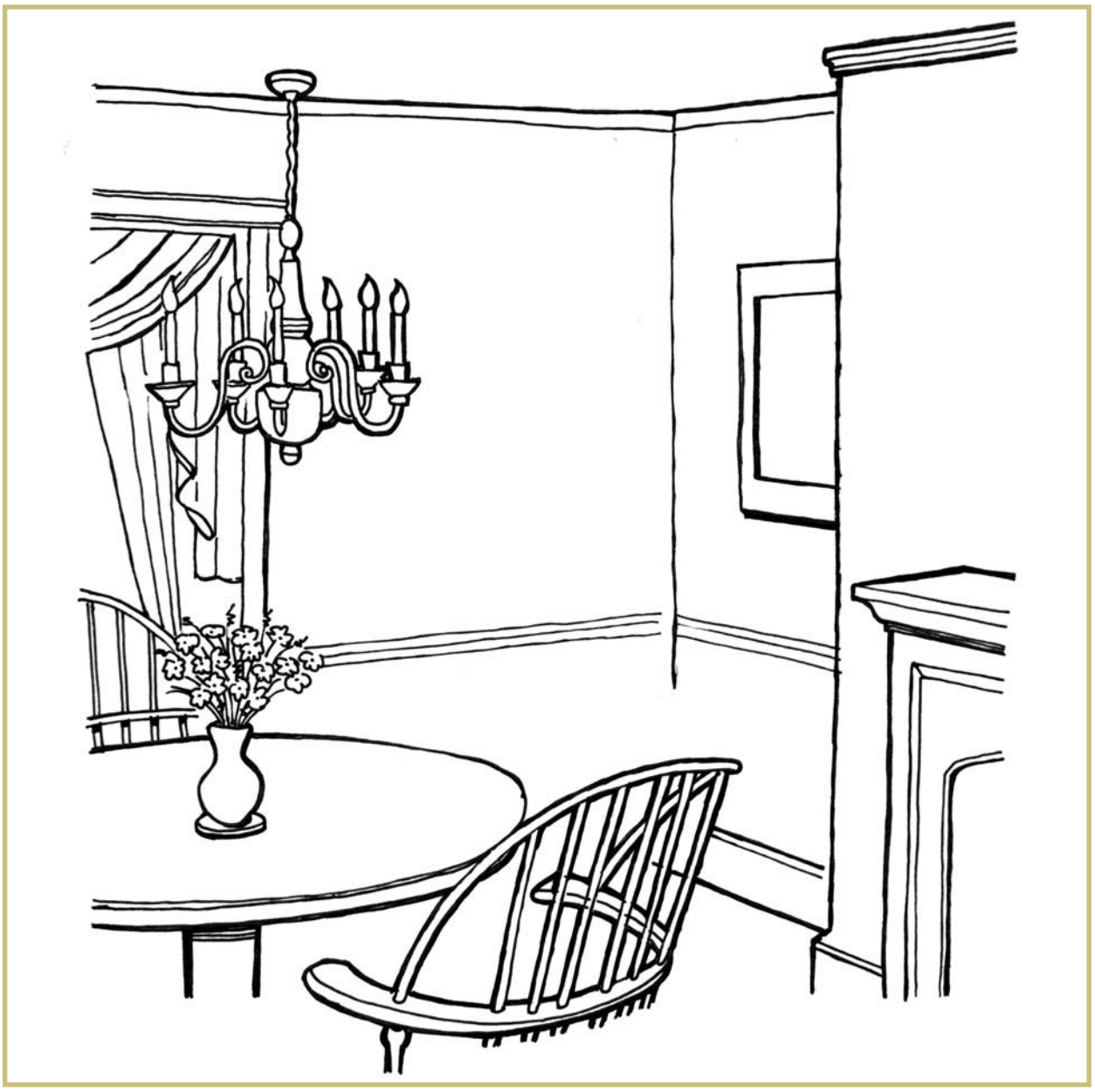


FIGURE 50—Joan and Ed Wrightson's Living Room

The most obvious solution is the triad composed of red, blue, and yellow, which is often effectively used for Early American settings. If the Wrightsons want something a little less obvious, you might try the triad red-orange, blue-violet, and yellow-green.

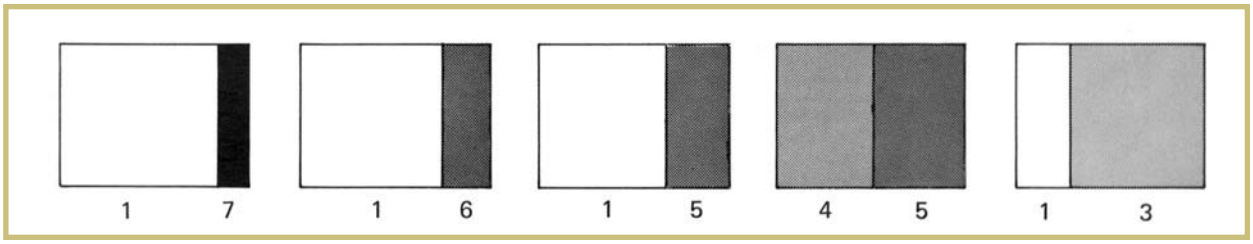


FIGURE 51—Color Experiment 6: Examples of Good Balance

Self-Check 1

1. rest, repose
2. background
3. primary
4. shades
5. color

Self-Check 2

1. orange, green, violet
2. monotony
3. complementary
4. color spectrum
5. no-color
6. warm
7. analogous
8. four

Self-Check 3

1. different
2. color wheel
3. afterimage
4. light

ANSWERS

NOTES

The Principles of Color

EXAMINATION NUMBER

01202400

Whichever method you use in submitting your exam answers to the school, you must use the number above.

For the quickest test results, go to http://www.takeexamsonline.com

When you feel confident that you have mastered the material in this study unit, go to http://www.takeexamsonline.com and submit your answers online. If you don't have access to the Internet, you can phone in or mail in your exam. Submit your answers for this examination as soon as you complete it. *Do not wait until another examination is ready.*

Questions 1–20: Select the one best answer to each question.

1. The word *red* describes the _____ of a color.

   A. hue
   B. value
   C. intensity
   D. shade

2. Which one of the following groups of colors is an example of a double-complementary scheme?

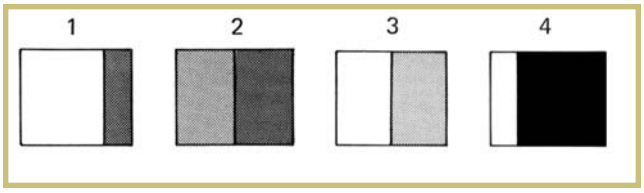
   A. Red, red-orange, green, and yellow-green
   B. Orange, yellow-orange, blue-violet, and blue
   C. Red, green, yellow, and violet
   D. Yellow-green, yellow, yellow-orange, and orange

3. The purpose of graying a color is to

   A. reduce its intensity.
   B. reduce its visual weight.
   C. make it appear faded.
   D. give it an aged look.

Examination

4. Which two of the examples in the figure below have good visual balance?



A. 1 and 2
B. 2 and 3
C. 3 and 4
D. 1 and 4

5. What can you do to minimize the fact that two windows are small and too far apart?

A. Paint the wall surrounding the windows in an intense color.
B. Paint the wall surrounding the windows in a very light value.
C. Use curtains or drapes that have the same hue and value as the walls.
D. Use curtains or drapes that contrast with the color of the wall.

6. Which one of these color combinations represents an analogous color scheme?

A. Red and green
B. Black, beige, and white
C. Yellow, yellow-green, and green
D. Yellow, green, and blue

7. Orange is a/an _____ color.

A. primary
B. secondary
C. intermediate
D. grayed

8. What is the direct complement of red?

A. Blue
B. Violet
C. Green
D. Yellow

9. Which one of the following colors may sometimes be considered a cool color and at other times a warm color?

A. Red-orange
B. Blue-green
C. Yellow-orange
D. Red-violet

10. When pure hues of complementary colors are used side by side, what effect occurs?

A. The colors intensify each other.
B. The colors create an illusion that a third primary is used.
C. The colors dull each other.
D. The colors form an intermediate shade.

11. Which one of these color combinations is a complementary color scheme?

A. Yellow and violet
B. Red, red-orange, and orange
C. Red and yellow
D. Yellow, green, and blue

12. How could you use color to achieve a very dramatic effect?

A. Use only muted shades of equal value.
B. Use tints exclusively.
C. Use only clear hues.
D. Use maximum contrasts in values.

13. Which one of the following groups of colors represents a split-complementary scheme?

A. Blue, orange, and yellow-orange
B. Yellow and blue
C. Violet, yellow-orange, and yellow-green
D. Red and orange

14. If one of your clients prefers a monochromatic color scheme, which one of these decorating schemes would you suggest?

A. A room decorated in shades and tints of one color
B. A scheme that uses tints of many different colors
C. A room decorated exclusively in shades of equal value
D. A scheme based on colors that are all of the same intensity

15. Which one of these combinations is an example of a triadic color scheme?

A. Red-violet, blue-green, yellow-orange
B. Red, green, blue
C. Blue-violet, violet, red-violet
D. Yellow-orange, yellow-green, blue-green

16. One of your clients wants pure hues of red and green as the color scheme in redecorating her living room. She rejects the grayed shades you present to her, explaining that she wants only clear hues. You should handle these colors by

A. using more green than red.
B. using more red than green.
C. separating the two colors with a neutral color.
D. adding blue to make a triadic color scheme.

17. If you use two colors together, one having a light value and one having a dark value, which one of the following effects will you achieve?

A. Blending
B. Overall light
C. Overall dark
D. High contrast

18. Because dark values appear heavier than light values, in what areas should you generally use light values?

A. Walls
B. Accent pillows
C. Smaller furnishings
D. Inconspicuous areas

19. To slightly gray paint that has an intense blue value, what color would you add to achieve the value you want?

A. Red
B. Orange
C. Yellow
D. Green

20. When using the rule of three in decorating, you would use

A. prints, plaids, and stripes.
B. wallcoverings, paint, and fabric.
C. neutral colors with three different textures.
D. three different colors for the scheme.